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THE PAPER TRADE JOURNAL.

"The Consumption of Paper is the Measure of a People's Culture."

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Trade Topics.

Some General Principles of Agency.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

As a matter of necessity in these days of large things agency, as a legal relation, enters very largely into all business transactions. In ordinary commercial relations it is practically impossible to turn about without coming in contact with this legal condition. The salesman who sells goods either for or to the merchant, the bank clerk, the insurance solicitor, and in fact nearly all the arms of commerce with which the individual comes in contact are agents, and do their work subject to the limitations which the law imposes upon that relation.

First, as to the parties to this relation, it may be said that any person capable of contracting in his own right, may delegate that power to another. Of course a power which is not possessed cannot be delegated, and therefore the principal must be legally capable of doing himself that which he delegates to another, and, as a rule, it must be that which he may do of his own right, for it is generally true that delegated power cannot be delegated. Those who may be agents occupy a much wider range. As a general thing, infants may become agents, and others who have not legal capacity to act for themselves. As a matter of fact, almost anyone, except one mentally incapable of executing a naked delegation of authority, may become an agent. This is because an agent merely does the specific thing which he is empowered to do, and has back of him, all the time, the guiding force of a legally competent person. Thus it is, that while a principal must be of legal contracting capacity, the agent need only be of actual capacity equal to the trust imposed.

It is a rule of law that no one can become the agent of another except by the will of the principal. While this is true, the relation may be created either by actual agreement or by implication raised by coincident circumstances. As a matter of fact the great majority of agencies are created in the latter manner.

When the agency is created by express appointment, its limitations are generally fixed and determined. When it arises by implication, its powers and authority are determined by the circumstances which gave rise to it. In dealing with an agent one is bound to know the extent of his authority, and this, unless clear on the face of the transaction, should be inquired into. If an agent acts under written authority, that is the limit of his power, and the best evidence of it. If he acts under a general authority it is a legal presumption, by which his principal will be bound, that he has power to do anything reasonably necessary to the accomplishment of the agency. The breadth of discretion which may be vested in an agent who acts under such an authority is sometimes vague and indetermined except by the peculiar circumstances of each case.

It is not true always that an agent has power to do anything in the matter involved, which his principal might have done, because that would go so far as empowering an agent to give away his employer's property. On the other hand it cannot be arbitrarily said that he must get a profit from each transaction, because sometimes business prudence demands a financial sacrifice. The general rule is that in such cases the agent must do what ordinary business prudence would dictate under the circumstances, and what that is can be determined only by each case.

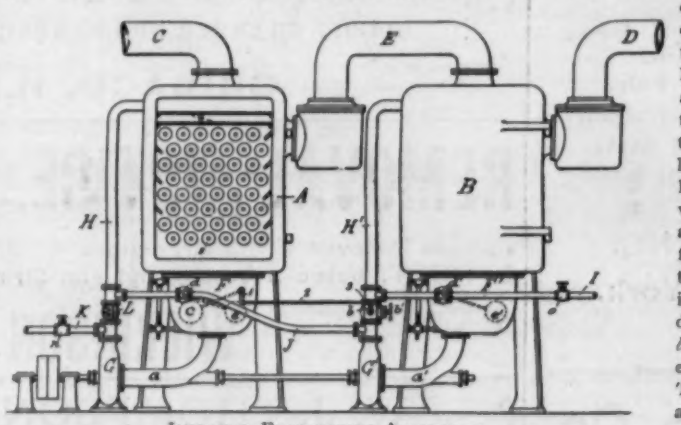
It is a fixed and inflexible rule of law that no agent can have any interests adverse to those of his principal. He cannot directly or indirectly purchase on his own account goods intrusted to him for sale. He cannot, while acting as agent for one principal, accept the agency of a competitor of his employer. He cannot sell on his own account in competition with his principal; all these conditions being subject, however, to the limitation that they may of course be done with the knowledge and consent of the principal.

An agency is determined by agreement, by renunciation of the agency or revocation of the authority, or by operation of law. The performance of the object of the agency or the expiration of its term cancels it by agreement. The death, bankruptcy or insanity of either party or the destruction of the subject matter of the agency terminates it as a matter of law.

Evaporating Apparatus.

An improvement in processes of multiple effect evaporation and in multiple effect evaporating apparatus for practicing the processes consists in passing the liquid to be evaporated through the effects in succession, and in continuous flow from effect to effect in the direction of increasing pressures and temperatures; that is, in feeding the dilute liquid which is to be concentrated continuously into the coolest effect of the series, in passing in continuous flow the liquid, in its partially concentrated states, through the progressively hotter effects in succession, and in taking the concentrated liquid away continuously from the hottest effect, after having passed as described through the preceding effects.

The apparatus illustrated embodies means for causing the liquid, which is to be concentrated, to pass thus through the effects of a multiple effect evaporator against the increasing pressures in the same.



IMPROVED EVAPORATING APPARATUS.

In the drawing the figure is an elevation of two evaporators placed side by side and connected to form a multiple effect, of which A is the first or hottest effect—which is shown with the front of its case removed, so as to disclose the evaporating tubes *s* and the distributing plates *v*, above them, and B is the second or coolest effect, the former being supplied with steam for evaporation by the main C, and the latter being, as a rule, connected to a condenser and vacuum-inducing apparatus by a main D.

E is the vapor connection between the two effects.

F and F' are small chambers, one for each effect, into which the liquid being evaporated flows and collects from the evaporating chambers of the effects. These chambers are preferably placed directly underneath the effects, but they may be variously located. From the bottoms of the float chambers F F', mains *a a'*, respectively lead to the induction ports of the circulating pumps, G for the first effect A, and G' for the second effect B. The discharge pipes H H' of the circulating pumps, termed "return pipes," lead back to the liquid distributing devices *v* above the tubes of the respective effects. The return pipe, H', of the second effect contains a valve—shown as a butterfly valve—at *b*, which is operated through the connecting mechanism 1, 2, 3, by the float *c*, shown in dotted lines, which float rests upon the surface of the liquid in the float chamber F of the first effect A. As this float rises it opens the valve *b*, and as it falls it closes the same, the valve being approximately closed when the float rests upon the bottom of the float chamber.

I is the feed pipe for the liquid to be evaporated to the coolest effect B, *i. e.*, it is the feed pipe for the multiple effect. It delivers into the return pipe H' of the effect B at a point between the valve *b* and the effect, and is provided with a valve, *d'*, which is operated by a float, *e'*, which rests on the surface of the liquid in the float chamber F' of the effect B, and as it rises closes the valve, and as it falls opens the same.

J is a second discharge pipe for the circulating pump G' of the effect B; as shown; it branches from the return pipe H' of the effect B at a point between the circulating pump G' and the valve *b*, and leads into the return pipe H of the effect A—in the construction shown in the drawing, although it may lead into that effect at any one of a number of places—and is provided with a valve *d*, which is operated by a float, *e*, which rests upon the surface of the liquid in the float chamber F, and closes the valve as it rises and opens the same as it falls. In the return pipe H of the hotter effect a hand valve L is located at a point between the circulating pump G and the place where the feed pipe J joins the return pipe. Between this valve L and the circulating pump a pipe, K, the discharge pipe of the system, branches from the return pipe and is provided with a hand valve, *n*,

The operation of the regulating devices of this multiple effect, and the course of the liquid in process of concentration through the same are as follows: Assuming the multiple effect to be in full operation with steam for evaporation entering to the tubes of the first effect A by the main C, the vapors from the first effect passing to the tubes of the second effect by the main E, the vapors from the second effect escaping, say, to a vacuum-inducing apparatus, by the main D, the circulating pumps G and G' to be in action circulating liquid over the evaporating tubes in their respective effects, the valve *o* in the feed pipe I wide open.

Then the thin liquid to be concentrated flows continuously through the feed pipe I into the effect B, via the return pipe H', and joins the circulating liquid therein in quantities automatically regulated by the float *e'*, in the float chamber F', and valve *d'*, to equal the quantity of liquid passing away from the effect by the pipe J to the effect A, as described below, together with the quantity leaving the effect as vapor through the main D.

The flow of liquid through the pipe J into the hotter and higher pressure effect A is effected by the valve *b* in the return pipe H' automatically operated by the float *c* in the float chamber F of the effect A to throw sufficient back pressure upon the pump G' to cause the liquid to flow through the pipe J into the return pipe H of the effect A, against the higher pressure in the latter. It is apparent that this float *c* working through the valve *b* automatically causes the flow of liquid through the pipe J into the effect A to be equal to the liquid leaving that effect as vapor by the main E, and as thickened liquid by the pipe K, as described below, so long as the limit of capacity of the pipe J or pump G' is not exceeded. Thus, if liquid should at any time be leaving the effect A faster than it was being supplied through the main J, the level of the liquid in the chamber F would fall, and the float *c* with it, the latter closing the valve *b*, to greater degrees, and so increasing the back pressure on the pump and the flow of liquid through the pipe J, and this action of the parts would continue until the rate of flow of liquid through the pipe J was made precisely equal to that of the flow of liquid (and vapor) away from the effect A. Conversely, if at any time (as through the closing of the valve *n* in the discharge pipe K) the flow of liquid through the pipe J into the effect A should be greater than that passing from the effect as liquid and vapor, the reverse operations would take place, viz., the liquid in the float chamber F would rise, the float *c* would rise with it, and the valve *b* in the return pipe H' of the effect B would open, until the back pressure on the pump G' was sufficiently diminished to reduce to the proper rate the flow of liquid through the pipe J into the effect A.

The pipe J is shown provided with a valve, *d*, which is operated by the float *e*, which rests upon the liquid in the float chamber F, the valve closing as the float rises, and opening as the float falls, and consequently adapted to automatically regulate the flow of liquid into the effect A to equal that passing from the effect as liquid and vapor. This valve *d* is set so as to permit a higher level of liquid in the float chamber than the float *c* operating through the valve *b* does, and consequently plays no part so long as the float *c* and valve *b* work normally, and effect a proper regulation of the flow of liquid through the pipe J; but should the latter for any reason be unable to sufficiently restrain the flow of liquid through the pipe J, then the rising liquid in the float chamber F would bring the float *e* and valve *d* into full action to automatically govern the flow, though maintaining the liquid at higher levels in the chamber F than is done by the float *c* and valve *b* when they are able properly to control the flow. The valve *b* may be a valve, as indicated by the dotted outlines at *b'*, operated by hand to maintain a sufficient back pressure upon the pump G', instead of being automatically operated by a float in the chamber F of the effect A. In this case the valve *d* and float *e* are entirely depended upon for the automatic control of the flow of liquid through the pipe J from the effect B into the higher pressure effect A.

Again, when the conditions of work—the differences in pressure between the two effects for example—are to be sufficiently constant, the valve *b* may be replaced by a fixed restriction placed somewhere in the return pipe, having such proportions that when the circulating pump is running at normal speed the restriction will cause sufficient back pressure in the pump to cause the flow of liquid through the branch J into the effect A. With this fixed restriction in the return pipe, should the difference in pressure between the effects A and B become abnormally great at any time, the pump G' might be run faster during the time and thus create a correspondingly increased back pressure.

The concentrated liquid flows away from the effect A by the pipe K, which branches from the return pipe H of the effect at a point between the circulating pump G and the point where the pipe J joins the return pipe. A valve L in the return pipe between the pipes K and J affords means, by more or less closing it, of creating sufficient back pressure in the pump G to cause a flow of liquid through the pipe K which flow may be regulated either by the valve *n* in the pipe K or by varying the back pressure in the pump by means of the valve L.

In cases when the liquid being evaporated passes through the multiple effect in sufficient quantities to keep the evaporating tubes properly covered without the aid of liquid returned by the circulating pumps G G'—which might be the case when only a small portion of the liquid has to be vaporized—the valve *b* in the return pipe H' could be fixed in a closed position, in which case the pump G' would serve merely to pass the liquid from the effect B into the effect A against the higher pressure in the latter.

The advantages of this method of multiple effect evaporation are said to be: First, economy of fuel in the concentration of liquids which have low initial temperatures, which economy is due to the fact that the liquid has only to be heated to the temperature of the coolest effect before evaporation takes place, since the liquid is fed into the coolest effect. Second, that viscous liquids can be concentrated to higher degrees, owing to the fact that as the density increases the evaporation is carried on at higher temperatures, that is, in the hotter effects—the final concentration being done in the hottest effect of all; and, since the fluidity of a viscous liquid increases with the temperature, the fluidity necessary to the proper working of an effect—to the proper distribution of the liquid over the surfaces of a film evaporator for example—can be maintained in the hottest effect with a less percentage of water in the liquid, *i. e.*, with the liquid at a greater degree of concentration than can be done in the coolest effect, and therefore, as above stated, viscous liquids may be concentrated to higher degrees by this method of working than by that hitherto practiced. Most saline solutions can be concentrated to higher degrees by this method without separation of the salts, owing to the salts being more soluble at higher temperatures.

Practical Hints and Helps Around the Mill.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By J. F. C.

The cutter room of a mill making a fine grade of paper is an important part of its equipment, for here the question of the suitability or unsuitability of the paper for the market is determined, and here may be a great leak in the matter of production if the work is carelessly done by unskilled help, or there may be a positive gain if the work is carefully done by competent help. The general excellence and uniformity of any product is a sure testimonial in its favor, and must result in keeping it in demand at a fair price.

In this department also the paper maker does not, as a rule, observe the best method of attaining this end, for the class of help here is very often changing, and of course anything like perfection cannot be expected of such help.

The trouble is generally that they are underpaid, or if such is not the case with the girls, then the foreman or helpers are to blame, because you cannot get a number of cutter girls to work together for their employer's interest without sharp watching. I do not mean any disrespect to the girls, because there are many competent and conscientious workers among them, and indeed I attribute their seeming lack of interest in their work to the generally buoyant spirits of youth and to the fact that the young woman does not generally consider that her employment is her life work, and that the better fitted she is for it the better position she may command. Marriage is her ultimate end and aim, and at work she is apt to copy after the mice, who "when the cat was away were wont to play."

I do not mean any satire upon the sex, but it is quite evident that where a great number are working together and the work does not admit of piece work nor of careful inspection after it has left their hands, then the help ought to be the best obtainable, and a competent fore man or woman should be in constant supervision.

It is a question of space and economy sometimes which will govern the choice of cutters. A good, heavy cutter which will cut several sheets at a time and make clean work is the best for any coarse or ordinary papers or news; but where the paper has to be sorted carefully, as book, magazine and all of the finer grades, then the cutter must be selected which is best adapted to produce the best work: for while each cutter may

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cut a sheet equally well, they do not all feed out the sheet to the operator in a manner equally suited for its inspection during the operation of laying the sheets, for a sheet which issues from the cutter on a line, or nearly so, with the cutter table, is not so easily scanned in its progress as one which issues from a higher point and is fed downward to the operator. In the latter case the sheet comes down in the same manner in which it might be held in the hands and dropped down for inspection. It is less trying to the eyes and can be sorted more effectually.

Again, if you are quite particular about selecting a sheet of paper you naturally hold it up before the light and look through it, and in this way the smallest defects may be very readily perceived. A cutter, then, for the finest work ought to have this quality, and I know of no other cutter which has it in as high a degree as the old-fashioned "dog" cutter.

To this end it ought to be set in front of a window, facing inward, the light from the window striking through both thicknesses, which are some distance apart, and, there being no other obstructions in the way, the sheet can be scanned easily and a very slight spot or imperfection detected without any strain or effort on the operator's part. It can be and generally is used in the same manner at night, the gaslight being placed directly behind the sheet of paper as it leaves the cutter knife.

The one great objection to the continued use of the "dog" cutter is the great amount of lost motion which it has in cutting short sheets; indeed in cutting any except the longest sheet, which one revolution of the driving gear produces, there is always more or less lost motion.

In a cutter capable, say, of cutting a sheet 50 inches long, and the desired sheet is only 25 inches, then half of the available time and power is lost. In nearly all of the new continuous cutters there is no lost motion whatever, so that a short sheet can be cut as economically as a long one.

Some to overcome this defect of lost motion have put in trimming presses and cut the sheet as large as possible on the cutter, and cut it to the smaller sizes on the press. This plan does not admit of the paper being so carefully sorted on the cutter, however, as a speck or flaw on the large sheet would necessitate the waste of several more. Some again cut large sheets and cut two sheets at once, then cut to size on press and resort; but I consider this an unsatisfactory and unprofitable method. It takes a large force of girls to resort several hundreds of reams of paper per day, and the constant handling of the paper in the process injures it for the market. I have seen it rejected and returned to the mill for this reason, the corners handled in turning up the sheets being generally crumpled and cracked.

I have in mind a four machine mill which a year ago found its old cutters too slow and taking up too much room. It had a dozen "dogs," so it consigned all except two of them to the storehouse; put in four new cutters—three Finlay, one Hill—cut from four to six sheets on each and had the paper resorted by the force of girls who were laid off by the removal of the old cutters. They kept at it for awhile, but it didn't seem to cheapen matters much nor give much more room, as the resorting occupied all of the available space. The amount of waste paper was increased for one thing, and the change did not "pan out" as expected. The result is that to-day it has six of its old cutters back in place and is running the paper through them singly and has no resorting done whatever. The Finlay and Hill cutters are running likewise, and I doubt not that the result is better in both the mill and the market.

Of course the "dog" cutter cannot be said to be an "all 'round cutter" (to use a sporting term), but to produce the best work it is not excelled by any in the market. It is perhaps more liable to need repairs from steady use than other cutters and is a poor machine in careless and unskilled hands, but with proper care and attention it works very successfully and gives satisfaction, so far at least as the quality of the paper produced is concerned.

In setting up a "dog" cutter the stationary blade should be level and tightly fastened in place, and the centre of the revolving knife shaft should be leveled to it and adjusted so that it will cut clear across the full width. Inaccuracies in the length or shape of the sheet occur frequently from the drum being out of true. When any such trouble occurs the drum should be inspected, as the trouble is very apt to be there. The constant jarring of the dog when striking into gear renders it loose very often. Keep it very tight. The segments for changing the length of sheet should be of brass; they will last twice as long as the cast iron and do not break off very readily as iron does. Segments generally alter the length of the sheet from half an inch per cog to seven-eighths of an inch, according to the size of the drum; three-quarters of an inch is the average length which each cog will lengthen or shorten the sheets. To get a sheet to exact size wind the drum with felt. A strip of heavy felt will alter the size three-eighths of an inch; of medium felt a quarter of an inch; of heavy cotton cloth one-eighth of an inch, and of thin cotton cloth one-sixteenth of an inch.

The advantages of electrical transmission of power are largely those of the relation of the position of the machinery with the motive power of the establishment. Each room is entirely independent from other rooms, and any motor is always ready for service as long as the machinery from which it derives its electricity is in operation.

Correspondence.

MIAMI VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, July 5, 1894.

Although trade in general seems to be picking up to an extent, the summer dullness has entirely shrouded the Miami Valley. Business is moving along in the hum-drum, cut and dried fashion, with little of a sensational turn to even spice the quietude.

During all of last week a number of strawboard operators were in session in Piqua, discussing, it is presumed, at length, matters of vital importance to that part of the trade. There is little doubt that the star-chamber meetings were hotter than the atmosphere. Nearly all of the representatives present were portly, well-fed gentlmen who, although unremitting workers, never lacked for rest or recreation.

The meeting was held for the purpose of adjusting difficulties, breaches, misunderstandings and a whole host of other entangling matters; but, so far as ascertained, the result was naught, and the operators were as far from the goal of fraternalism as they were during the turbulent times at Chicago, when the election of officers and other "trivial affairs" caused a rumpus. The object of the Piqua meeting was confined in these few words dropped complacently from the mouth of a strawboard manufacturer, viz.: "We intend to perfect an agreement whereby the 'ins and outs' may pool issues."

The "outs" were represented by J. F. Spaulding, of Boston, Rush Evans, of Chicago, and L. Leonard, of Piqua, while the other faction facetiously dubbed the "ins," but more properly those who are intimately identified with the American Strawboard Trust, was ably defended by Vice-Presidents R. T. Newcomb and J. H. Swinarton, of Chicago, and Treasurer W. P. Orr, of Piqua.

Again it is denied that these gentlemen met for the purpose above stated, but it is asserted that different matters, entirely divorced from the foregoing, were under deliberation. It appeared to many that the "nigger in the wood pile" displayed his teeth to such a ferocious extent that there was no mistaking his indocility. However, so far as Piquads were concerned, it seemed that the gentlemen formed an outing party. They admired the cool, shady, quaint old town, and all agreed or felt it in their bones that "it was good to be there."

The Bradley Cordage Company, of Dayton, was incorporated the other day with a capital stock of $150,000. The incorporators were George Bradley, Alfred Bradley, Charles H. Spencer, Andrew S. Frazer and Charles Wuichet, all of this city. They are well-known gentlemen, and will at once make extensive arrangements for the manufacture of cordage. However the plans have not sufficiently matured to be given as yet in detail.

About the same time articles of incorporation were filed in the Secretary of State's office for the organization of the People's Co-operative Publishing Company, of this city. Capital stock, $10,000; incorporators, J. Steward, Edwin H. Parker, Dan C. Hoffman, George Stoll, Arthur C. Mitchell, John C. Cox and James H. Morgan.

A new paper has been started in this city. It assumed the name dropped a few years ago by the best Democratic paper in the county, which has finally merged into the *Times*, and it is consequently known as the *Monitor*. The field is full in Dayton, which supports two morning and four afternoon papers, besides a Sunday sheet and scores of weeklies and other periodicals. It is possibly lucky that the new paper is published in the interests of Ohio liquor dealers.

Although disputed with impunity in the local papers of the valley, the sale of the Amanda plant to the Lima manufacturers was bona fide in every respect, as stated previously in these columns. It is even now more hopefully expressed that the mills will be in operation sooner than at first anticipated. This news is encouraging, particularly to unemployed workmen in the southern part of the valley.

The burning of the Rockdale Mills has resulted in much general complaint. The force employed was quite large for the size of the place. There is a difference of opinion as to the origin of the blaze, some contending that the heat generated in the damp material caused spontaneous combustion, while others think that lightning was responsible for it. The fire was far under headway before assistance arrived and the bucket brigade was unable to cope with the flames. The structure burned like tinder, the walls almost melting under the intense heat. The west wall fell into the canal and retarded the passage of boats.

This recalls that the Haldeman Paper Company has been in exceeding ill-luck this summer. Only a few weeks ago its Lockland plant was almost destroyed by fire and a large loss was sustained. This fire following so closely has proved very disastrous. While the Lockland Mill will be rebuilt, there is some doubt as to the prosecution of work on the Rockdale plant.

All of the mills in the valley closed yesterday, and July 4, 1894, was just as memorable a day as any of its predecessors. Most of the paper makers enjoyed a day's outing in the various summer resorts and shady groves in this locality.

Many of the paper manufacturers—in fact all, without an exception—in the city are evidencing a deep interest in the Charity Circus, an event booked for July 12. This circus will be a real one in every respect and be an exhibition of local acrobats and wonders of the age. The receipts will be devoted to the St. Elizabeth and Deaconess Hospitals, two of the largest in the country, the latter having just been completed at an expense of $150,000. It is expected that at least $10,000 will be cleared. All manufacturing concerns in the city will be represented in gorgeous pageant by cages of regulation size and some suitable float. Several of the paper manufacturers have been placed on committees and so general is the work attached thereto, that in many instances personal interests have been sacrificed; but the unselfish, downtrodden paper makers will not be the ones to show a weak vertebra.

M. V.

BOSTON.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL,
67 FEDERAL STREET,
BOSTON, July 5, 1894.

If there is any one week during the year when the paper business is duller than at any other time it is certainly Fourth of July week.

Owing to the fact that the Holyoke mills are shut down this week there is little doing in mill supplies with local concerns which cater to the needs of the Paper City.

A week ago the outlook was more encouraging than it is to-day. Then the hope of improved business in paper, based upon general trade conditions which seemed to be waiting only for some favorable factors to move them in the right direction, was entertained and it was thought that another thirty days would bring the beginning of the better times to come.

Now, interstate commerce is almost at a standstill as a result of a railroad strike in the West, and pending this railroad boycott the distribution of goods is stopped and consumption is curtailed.

Only a few months ago nearly every city in the country was raising funds by contributions from the poople to feed and clothe the unfortunate who were thrown out of employment by the industrial depression. Armies of workmen, without work, were marching to Washington, hoping that their demands might prompt a return to industrial prosperity. Since then thousands of workmen in the coal mines, and now tens of thousands of railroad employees have voluntarily quit work, by their actions preventing the return of business prosperity.

It does indeed seem strange that the industries of this great country, its financial system, its traffic and its interstate commerce must be so frequently subject to such serious derangements.

At times when the bottom seems ready to drop out of the tub efforts are made to tighten the hoops to hold the structure together. It would seem that is the condition of the paper manufacturing industry to-day, and yet no concerted action is being taken to help matters. As it is the unexpected which always happens, it is possible that something in the line of improvement may

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be suggested at the Paper Manufacturers' Convention. That overproduction could for a time be stopped, that lower prices might be prevented, that some of the abuses might be remedied is obvious, and these questions could be acted upon, possibly for the benefit of the paper trade at large.

It is evident that a good deal of very serious thought is being given to matters pertaining to the trade, but whether any action can be instituted for the general good is for the paper makers to decide. Will they take any such action at the convention?

Will the leading paper makers of New England, the East and the West be at Saratoga? Secretary Barker states that fifteen manufacturers have so far notified him that they will be present. This number should be increased tenfold at least. Are there not 150 paper manufacturers sufficiently interested to attend the meeting at Saratoga on July 25.

Hugh J. Chisholm, of Portland, Me., sailed from Boston last Saturday on the Cephalonia for Europe accompanied by Mrs. Chisholm and his little boy. The trip is solely for pleasure and recreation, and Mr. Chisholm expects to return in time to attend the Paper Manufacturers' Convention at Saratoga, July 25.

The summer travel to Saratoga from Boston and New England has about set in, and, as usual, the Fitchburg Railroad Company is getting a good share of this patronage. A special daily train styled "the Saratoga Fast Express" has just been put on by the Fitchburg road via the Hoosac Tunnel. This special train leaves Boston at 9 o'clock every morning, arriving at Saratoga at 3:30 P. M. The train stops for half an hour at Greenfield for dinner. This is the train for Boston parties to take for Saratoga Springs.

A sale of some 400 bales of rags was made last Monday to insurance companies, the best sale made by Boston importers for a long time. The rags went right into consumption. Fire consumed them. They were stored in a warehouse of the Boston and Albany Railroad in East Boston and had been there for a year, the importers paying insurance premiums on the rags right along. Train, Smith & Co. owned about forty bales or more, True & McClelland owned just 121 bales, a few bales belonged to W. F. Corn and the remainder to C. A. Cheney.

Mr. Little, of Griffin & Little, the paper mill chemists, has about completed his work on the "Chemistry of Paper Making." All copy is now in the printers' hands and only proof of the last chapter and appendix is to be revised. When issued subscribers to this work will have little cause to complain. Those who know Mr. Little and are conversant with the magnitude of his business and know how busy he has been, in the courts as an expert, at paper mills in consultation, in his laboratory directing experiments, and in his office dictating correspondence, wonder how he could find the time to write up so exhaustive a work on the "Chemistry of Paper Making." The death of Mr. Griffin, his able associate, when this book was but half completed, threw double work upon Mr. Little's hands, and for a time he felt the increased responsibilities most seriously. The progress made from day to day on the book had often to be proved correct by research and laboratory work. From time to time the leading scientific publications of France and Germany would present new topics of interest, bearing directly upon paper making, and these subjects it became necessary for Mr. Little to investigate to keep his book up to date and to treat the subject as exhaustively as his ability would permit. The book when issued will be convincing evidence that Mr. Little knows something about the chemistry of paper making, and it will reflect credit upon its authors. Howard Lockwood & Co., while naturally regretting the long delay in completing the book, will have cause to congratulate themselves that the work has been so ably done. Subscribers can be assured that the "Chemistry of Paper Making" when delivered will be a publication of much value, containing information which has taken experts years to gather.

Recent trade visitors to Boston, who have been called in to "wet that hat," will understand the drift of the following lines:

Two nobby hats of a very swell shape,
Two nobby hats in brown;
They are not yet common, but a little ahead
Of anything else in town.
Harry, he set the fashion,
Expecting to lead in style,
When lo, and behold, his dear friend Sam
Came out with a duplicate tile.
And now as you chance to see them
A-coming down the street,
You really can't tell if it's Colonel Train,
Or Harry Bartow you'll meet.

DELESDERNIER.

FOX RIVER VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., July 3, 1894.

The movement of the paper makers of this valley to restrict production, which has attracted so much attention all over the country, is not the bluff which some people have seemed to think it. The paper manufacturers of the Fox and Wisconsin River valleys and the Marinette district held another meeting at Neenah last Saturday, to perfect further details regarding the closing down movement. A permanent organization of all the manufacturers of these districts was formed under the name of the Paper Makers' Association, and officers were elected as follows: President, J. A. Kimberly, of Neenah; vice-president, Col. H. A. Frambach, of Kaukauna; secretary and treasurer, W. M. Gilbert, of Neenah. The following named gentlemen were chosen as an executive committee: the president, vice-president and secretary, and W. P. Hamilton, of Marinette; John McNaughton and J. S. Van Nortwick, of Appleton; Geo. A. Whiting, of Menasha; Frank Garrison, of Centralia, and W. L. Davis, of Neenah.

The executive committee was empowered to close all of the mills in the territory covered (which includes all of the mills in Wisconsin) for three days during the first fifteen days in July. It is understood that July 4 will be one of these days, but beyond this each mill will choose for itself, closing three days by the 15th. Each mill will report details regarding the closing of each machine to the secretary of the association. By the 15th it is expected that something will be definitely known about the attitude which will be taken by the Eastern mills, so that the future here may be planned for.

N. H. Brokaw, of the Falls Manufacturing Company, Oconto Falls, reports that the foundations of the company's new paper mill are now completed and that the frame of the finishing building has just been raised. The machine tracks are about half completed. A part of the machinery has been shipped and is now on the road. The 110-inch machine is being made by the Pusey & Jones Company, of Wilmington, Del.

Things are progressing favorably also at the new mill of the Dells Paper and Pulp Company at Eau Claire. The remodeling of the building is just about finished. The water wheels and pulp grinders are now on their way to the mill. No one can tell when they will arrive there however, on account of the railroad strike, which has just at present shut all freight business down tight. Even the mails have not been received in this city to-day. The Dells Company is having an old machine rebuilt by the Beloit Iron Works and a new machine made by the Pusey & Jones Company. The old machine has an 80-inch wire, and the new one will have a 106-inch wire. The Dells people expect to be making paper in about two months, which is also about the time that the Falls Manufacturing Company hopes to get started.

Several weeks ago I spoke of the fact that the Winnebago Paper Mills of Neenah was putting in the Williams vacuum system of steam heating, made by Warren Webster & Co., of Camden, N. J. The company has been testing the new system for some time and reports itself as being very much pleased at the result.

The Nodaway Boat Club, of Neenah, some of whose members had such an exciting experience on Lake Winnebago a couple of weeks ago, as reported at some length in THE PAPER TRADE JOURNAL, is to have another regatta to-morrow on the Lake. Every one has entered and a very exciting event is anticipated.

Smoke was discovered yesterday ascending from a pile of refuse in the rag room of the mill of the John Strange Paper Company at Neenah. The alarm was quickly given and water doused upon the suspected spot, preventing any damage.

The Thilmany Pulp and Paper Mills, of Kaukauna, received an order last week for 200,000 reams of tissue paper. It will take ten cars to carry this quantity of paper to its destination in New York.

The toilet paper mill of the John Hoberg Paper Company at Kaukanna was started up again last week and reports prospects good for an excellent trade during the summer and fall.

The Badger Paper Company, of Kaukauna, is putting a couple of new water wheels in its ground wood mill at Quinnesec Falls and making some other minor improvements.

The work of sorting out the pulp wood which came down with the Wolf River drive is completed at Shawano, and shipping will begin as soon as the sidetrack at that point is finished, which will probably be this week.

There has been some fear that the present railway strike would cause a scarcity of coal at the mills. It is reported that the gas works and some other industries have only two or three days' supply on hand. The paper mills, however, are all supplied from the docks at Sheboygan, and as local freight can be moved there will be no trouble unless the strike assumes larger proportions than at present.

N. H. Brokaw, who has lately returned from the East, says that he did not visit any of the mills in Holyoke, but that elsewhere he found business about the same as it is here.

J. S. Van Nortwick returned this week from a business trip to Chicago.

T. W. Orbison is in Chicago this week.

W. M. Gilbert, of Menasha, is calling on the trade in Chicago this week.

FOX RIVER.

HOLYOKE.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., July 5, 1894.

Having duly celebrated the anniversary of our National holiday and burned the necessary amount of gunpowder and colored fire, we resumed work this morning as if nothing had happened.

The water was let into the canals at 6 A. M., after a week of idleness, and the wheels are humming merrily again.

Some of the mills have filled enough orders this week to reduce the stock of goods on hand, and this is one pleasant feature of the shut down. You cannot find many manufacturers, however, who will admit that they are accumulating any finished goods worth mentioning. Most of them say that they prefer to run on short time rather than do that. The uncertainty of the market will not warrant much overproduction.

Very little that is new has developed during the week as regards the movement of goods. The mills running on standard grades seem to have the inside track as regards prices and orders, but even these could accommodate a much larger business.

The stock market does not put on much activity, and the demand does not exceed present needs to any extent.

The State authorities are getting ready to award the contract for the paper needed by the various departments, and as prices are much lower this year than usual the $30,000 appropriated for this purpose will buy much more paper than usual. Few people know how much paper is needed for a year's supply for the Commonwealth. The number of sheets required is 5,460,000. The printing department needs 10,000 reams of book paper, 800 reams of flat paper, 300 reams of record paper, 100 reams of cover paper and 12,000 sheets of bond paper. There are fewer bidders than usual this year, and very little can be made on the contract.

The Whiting Paper Company is to expend $40,000 on its No. 2 mill this year, and the shut down will continue until well into September. This mill has had a great deal of money expended on it in the last few years.

Quite a number of the flumes connected with the different mills were repaired during the shut down, and the Holyoke Water Power Company did some needed repairs on the canals. The Holyoke Paper Company is putting in a new flume, which will take the place of one which has done duty for a number of years. The George R. Dickinson Paper Company has also put its feeders in good shape.

The Chemical Paper Company is making all of the paper needed by the Western Union Telegraph Company, and it takes a heap of it to go around. The company has had this contract for a number of years, and it is valuable. The same mill makes all of the paper required by the Consolidated Railroad, and also furnishes hundreds of tons each year for tobacco houses, which use the paper for cigar wrappers.

William F. Whiting has had plans drawn for a handsome residence to be built on Appleton street on a large lot adjoining his father's house.

Eagle Lodge of Paper Makers held their annual picnic and field day at Lake Congamond yesterday, and hundreds of people left the noise and dust of the city behind and enjoyed the fun. The lodge will net quite a goodly sum.

Strawboard sells for $22 a ton, which is exceedingly low.

J. P. Prescott, of the Parsons No. 2 Mills, who has been sick and nigh unto death, will go to Saratoga soon for recuperation.

A. M. French, of the Linden Paper Company, has taken his family to Lenox, in the Berkshire Hills, for the summer. H.

PHILADELPHIA.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, July 5, 1894.

Dullness characterizes the local paper trade, as it does all other lines of business; but whereas it has been heretofore an unseasonable dullness, the time has now arrived when dullness is expected and is therefore more patiently borne.

The first of July this year is remarkable in bringing with it few business changes, the only one I have heard of in the paper trade being that made by W. D. Allen in leaving the Titus-Gardner Paper Company and starting in the paper business for himself at 623 Commerce street, under the firm name of W. D. Allen & Co.

All—or nearly all—of the mills shut down over the Fourth as usual, and they are taking the opportunity to remain closed until next Monday. The only bright spot in the situation is the phenomenally low prices of paper makers' supplies, which enables stock to be made at cheaper cost than ever. I asked a manufacturer to-day whether it would not pay to use the immense crops of flax straw, which are burned *in situ* in the Northwest, for paper making; and he said that if it could be had for nothing, the freights would place it out of the question with rags at their present figures, "and," he added, "they don't make that kind of paper in the West." Bleach, also, has taken a decided drop, the alkali trust offering July delivery at $1.75, while so much competing material is now coming into the market that local consumers talk hopefully of driving the figure as low as $1.50 by the end of the year.

In this connection I was to-day shown a clipping from the London *Financial News*, reviewing the trust's prospectus and pointing, among other things, to the fact that the £10 shares of this great chemical combination, which was to monopolize the manufacture of bleaching powder, soda ash, caustic soda, white alkali, sulphate of soda, crystals of soda, chlorate of potash, sulphuric acid, &c., are now selling at £4 12s. 6d. The writer thinks that "it is certainly a curious thing, if this company is established on sound lines, there should have been a fall of 55 per cent. in the value of its ordinary shares. What is more remarkable still is, that the insiders and a good many of the vendors appear to have been selling out pretty freely during the past year or so."

Accompanying the clipping was a private letter from Liverpool, from which I am permitted to quote the following: "The transfer return was made up to March 30, since which heavy selling is reported, so that matters do not look very rosy. The article has naturally caused much annoyance to the directors * * * and, not a little amusement on 'Change. Chemicals are just as dull as they can be; business confined to retail orders, and few even of those. * * * Taken altogether, the position is far from encouraging, and although better times are expected when United States of America tariff matters are settled on some basis or other, the outlook is not brilliant." Finally, there are serious rumors of several new attempts to establish the manufacture of bleach and salt cake in this country; so the future looks "rosy" enough for the American consumer at least.

Philadelphia has made bids for every item of the Government supplies, and naturally there is some anxiety and some impatience to learn the results. It is to be presumed that a fair share of them will, as usual, come our way.

A trade event, in its way, was the marriage, on June 26, of Robt. D. Ingram, secretary of the Wanaque Paper Company, to Ellie Gerard, at 137 North Eighth street, the bride's residence. The trade was represented among the guests by C. M. Stoever, V. L. Stoever, E. C. Wharton Smith, J. C. Smith, Chas. Callender, Chas. Mullin, Geo. B. Reed, Mr. Greiner, B. Sawyer, R. Edwards, H. Stokes and Wm. D. Mangels (New York). The couple will live at the St. George in Brooklyn, I believe.

Thomas Tolson, formerly of John A. Dushane & Co., is now representing the Megargee Paper Mills in Baltimore.

The Glenn Mills Paper Company's new mill is running regularly and successfully on parchment, fibre and music papers.

I notice among your advertisers the card of Dingel, Weinman & Co., Lynchburg. Some two years ago I had occasion to inquire into the manufacture and uses of barytes, and in the course of my work visited the mills and mines of this firm, and this is the first opportunity I have ever had of expressing my appreciation of the kind treatment I received. Never has it been my good fortune to fall into the hands of two more courteous gentlemen than Mr. Dingel and Captain Terry. As for the barytes, I can testify that the quantity is limitless and the quality unsurpassed, and when their new blanc fixé plant is completed, "you will hear something drop" in the barytes business!

Among recent visitors to the city were: Messrs. Gruninger, of Staub & Guyer, Genoa, Italy; John Linde, of the Linde Paper Company, New York; Wicks, of the Remington Paper Company, Watertown, N. Y.; Chapin, of the Ticonderoga (N. Y.) Paper Company; Charles Barden, with Crane Brothers, Westfield, Mass.; H. S. Watson, of H. S. Watson Company, Erie, Pa., and T. S. Coolidge, of the Lake George Paper Company, Ticonderoga, N. Y.

C. S. Garrett & Sons' mill is running full time. STYLOGRAPHIC PEN.

The Late Francis W. Bird.

A select company of the friends of the late Francis W. Bird and members of the famous Bird Club, named after the deceased, met on June 30 at the Parker House, Boston, to do honor to his memory. Hon. Henry L. Pierce presided, and among those present were Mrs. Julia Ward Howe, ex-Governor Claflin, Hon. George F. Williams, Judge Fox, of Taunton; Hon. Albert E. Pillsbury, Frank H. Sanborn, secretary; Collector Winslow Warren and ex-Collector A. W. Beard, Hon. John E. Russell, John I. Baker, E. F. Stone, of Newburyport; Henry M. Howe, Nathan T. Allen, of West Newton; Joseph A. Allen, of Medford; Charles Foster, of Quincy, and A. M. Howe, of Cambridge.

After dinner the meeting was made public, and many letters were read and speeches made.

Mr. Pierce in opening the proceedings paid high tribute to the deceased. Hon. A. E. Pillsbury, the Hon. John I. Baker and the Hon. Alanson W. Beard followed, the latter reading a letter from ex-Senator H. L. Dawes. Julia Ward Howe gave expression to sentiments of affectionate remembrance. Hon. John E. Russell then made some remarks and read a letter from the Hon. Carl Schurz.

Other speakers were the Hon. E. F. Stone, the Hon. Geo. F. Williams, Judge Fox, Collector Warren, ex-Governor Claflin and Archibald M. Howe. Letters of eulogy from Prof. Francis Wayland, Mrs. M. N. Dean, Rev. A. P. Putnam, Col. Chas. R. Codman, John Quincy Adams, Willard P. Phillips, Archibald M. Grimke, Samuel Bowles, ex-Gov. John D. Long, Judge E. R. Hoar, Senator Geo. F. Hoar and Judge Robinson were read.

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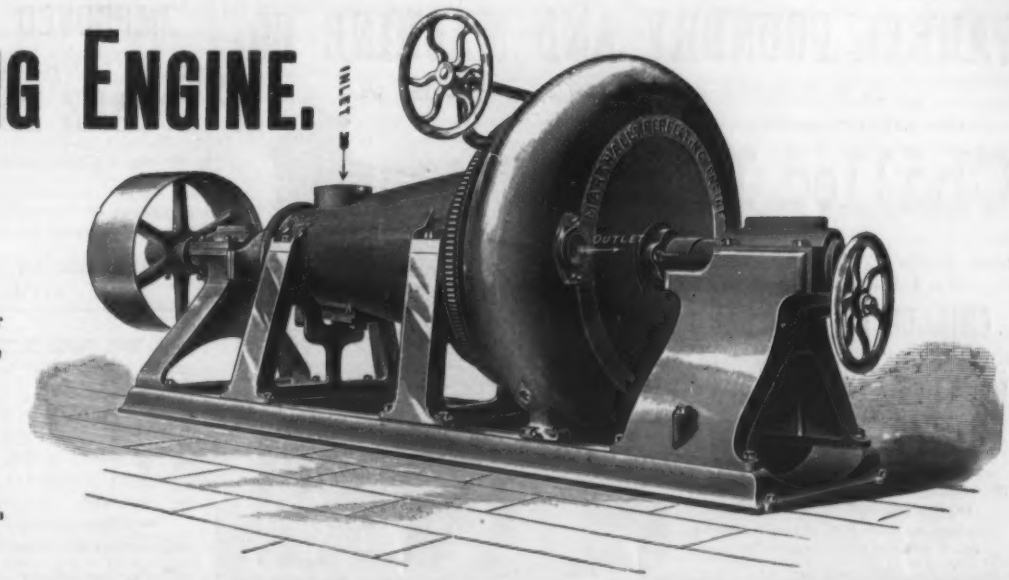

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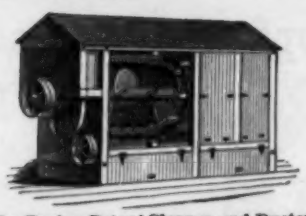

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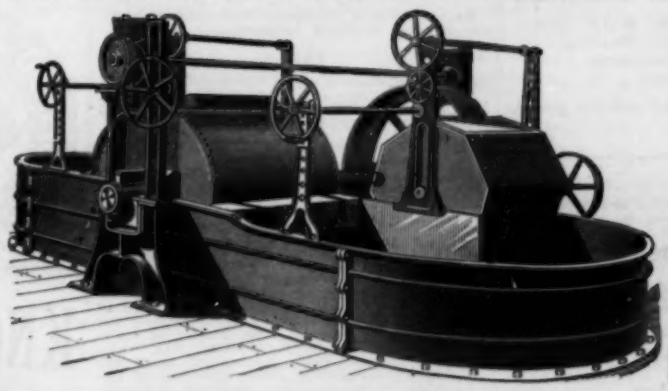

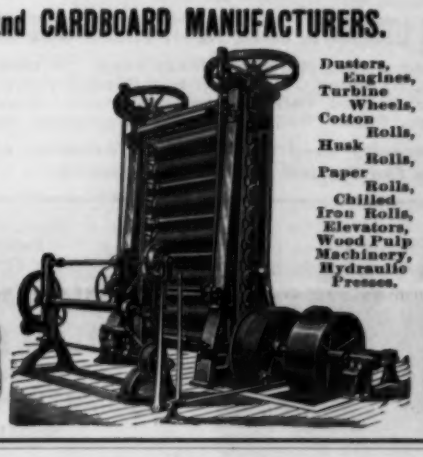

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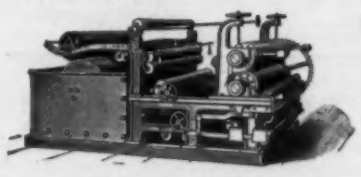

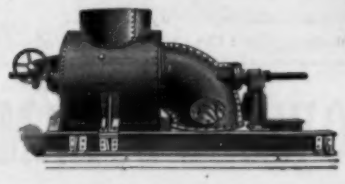

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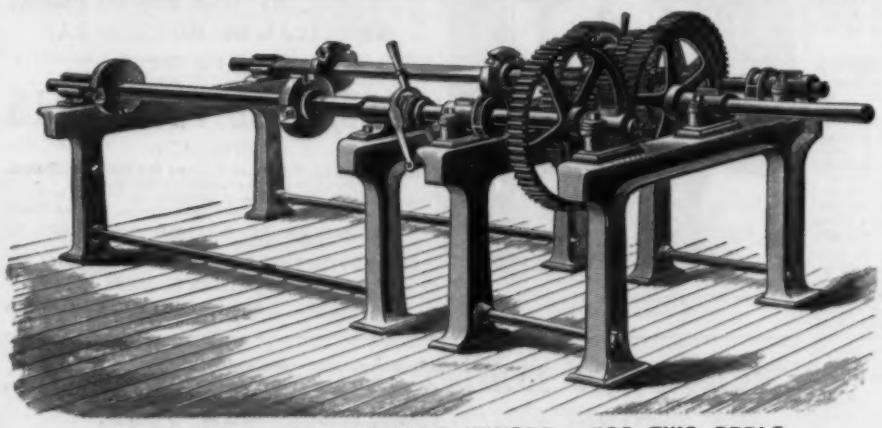

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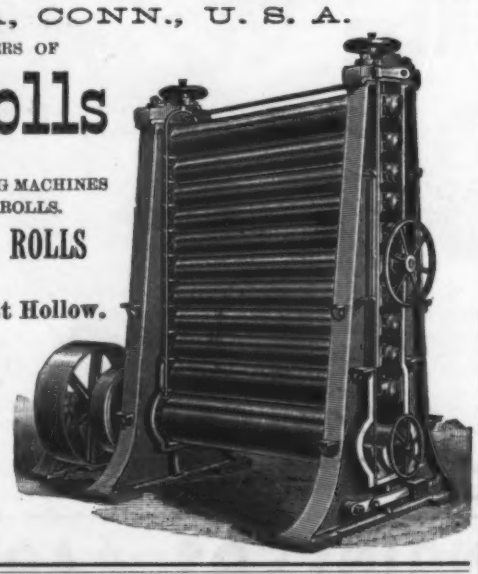

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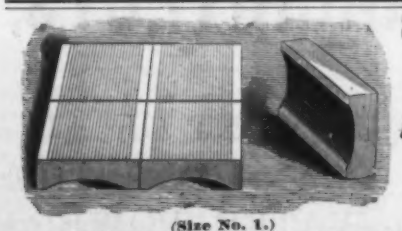

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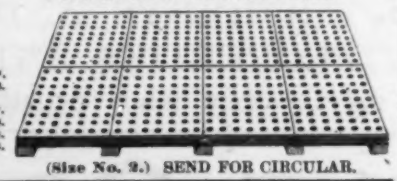

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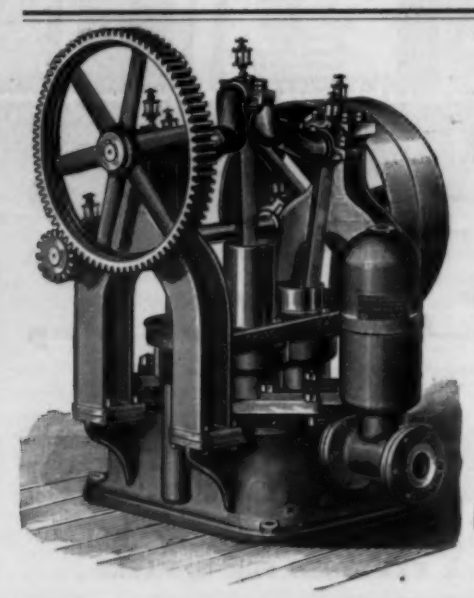

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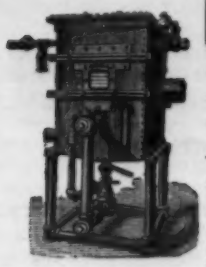

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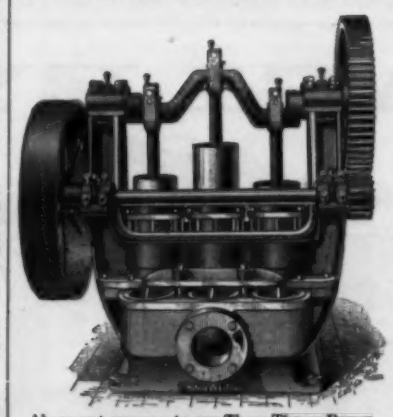

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Electro-Chemistry in the Paper Mill.

Eighth Paper—Effects of Polarization—Supplementary Cathodes.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By James F. Hobart.

The electrolytic cells heretofore described, represent the most important types in use, and I hope that they will prove sufficient to turn the attention of the experimenter and inventor in a direction to reach useful results. It is too often the case, in exploring new territory, that each inventor wastes much valuable time in going over for himself, ground which has been thoroughly beaten by all who have gone before him. If, instead of going individually through all of this preliminary work, each searcher for new things could acquaint himself with all that experimenters and inventors have done before him, he would be saved a vast amount of tedious and expensive research, and be enabled to apply his efforts at once to the object to be attained. In other words, the inventor would not have to go through an apprenticeship to "learn the trade." In the hope of aiding in this direction, I propose to give brief descriptions of the various anodes, cathodes and diaphragms which have been tried, their behavior, faults and good qualities.

The evolution of hydrogen is one of the things to be contended with in electrolysis of chloride of sodium. It needs only a very thin layer or coating of hydrogen on the face of a cathode plate to suspend almost or quite entirely the action of the best electrolytic apparatus ever made. Hydrogen gas is little, if any better as a conductor of electricity than dry air, and 1⅛ millimetres of dry air requires about 10,000 volts to drive current across it. Let us suppose that an electrical plant for electrolysis yields 300 amperes under ten volts pressure. The power consumed will be 300×10 =3,000 watts or 3,000÷746=4 horse power, nearly. As the counter electro-motive force of NaCl electrolysis is about two volts we have 10—2=8 volts for overcoming ohmic resistance, &c. As current always equals the electro-motive force divided by the resistance, $\left(C=\frac{E}{R}\right)$ then in this case the resistance must be inside of $300=\frac{8}{R}=0.0266$ ohm (about $\frac{1}{37}$th).

A minute bubble of hydrogen gas is perhaps $\frac{1}{10}$th millimetre in diameter. A close coating of minute bubbles of hydrogen gathers upon the face of the cathode (similar bubbles of chlorine being continually evolved upon the surface of the anode), and the result is that a coating of hydrogen .01 millimetre thick has formed upon the cathode, and this coating has the effect of requiring $\frac{.01}{1.5}\times 10000=66$ volts to force 300 amperes of current through the thin coating of hydrogen. It does not work this way in practice. Instead of the voltage being increased with the resistance, so as to maintain a constant current, the resistance is increased, and the current is cut down according to the following formula:

$$\text{As } 300=\frac{66}{R},$$

$$\text{Then } R=\frac{66}{300}$$

$$R=.22 \text{ ohm.}$$

$$\text{Again: } C=\frac{8.}{.22}$$

$$C=35.4 \text{ amperes.}$$

Therefore, with .01 millimetre of hydrogen on the cathode plate, the resistance increases from .0266 to .22 ohm, and the current is cut down from 300 to 35.4 amperes. This shows how important it is that the electrodes shall be kept clean from hydrogen, also from an accumulation of chlorine bubbles. It is indeed true that polarization causes a great deal of trouble in electrolysis.

To prevent polarization several schemes have been tried. Some of the ways actually prevent it by absorbing the hydrogen as fast as it is disengaged, by the use of some depolarizing element which is introduced upon the surface of the cathode. In The Paper Trade Journal of December 2, 1893, was shown a traveling apron which serves as a cathode, and also carries a coating of oxide of copper, which takes up the nascent hydrogen as fast as it is formed; this form of electrolytic cell may be classed as a two fluid, gravity-mechanical diaphragm, something alike in principle, but differing otherwise from the three fluid horizontal diaphragm cell described in the last paper (VII.).

In other cells the cathodes are made of extraordinary surface, so as greatly to reduce the thickness of the adhering coating of hydrogen; in others the cathode surface is made uneven. One construction in particular makes the section of the electrodes in shape like a carpenter's splitting or rip saw, the short ends of the teeth lying horizontally upward, the long bevel acting as the working face for deposit of the ions, then, as the hydrogen collects, it travels upward along the face of the cathode, but as the bubbles come to the point of the "saw tooth," they break away and rise to the surface of the electrolyte or go to some conduit provided for their reception.

Another means of getting rid of hydrogen is to use what is called a "supplementary cathode." Practically this consists of making the diaphragm of some conducting material like carbon, and then connecting the diaphragm to the cathode by a wire of considerable resistance compared with the main lead between the cathode and dynamo. Vertically the diaphragm is connected to the cathode or to the negative lead by a small wire.

It is claimed that when things are connected as above suggested the hydrogen, or most of it, is liberated between the diaphragm and the cathode, while the soda is set free at the surface of the latter. Such a diaphragm is described in The Paper Trade Journal of April 7, 1894, and it is claimed that an effective diaphragm can be made of a double basket of wire gauze, the space between being filled with crushed carbon. However well such cells may appear theoretically, it should always be remembered that theory and practice do not always agree, because when they do not coincide we have either got a wrong theory or the wrong practice. If both are correct there will be no disagreement; therefore we must not be too much disappointed if we find with supplementary cathodes that primary electrolysis goes on at the diaphragm instead of at the cathodes, and that the chlorine is contaminated with soda to a great extent.

There is another important matter to be considered when "supplementary cathodes" are under discussion, and that is, the current must never be cut off, or the wire forming the supplementary cathode will be attacked and perhaps destroyed by attacks of the ions as soon as current is cut off. To prevent such a thing from happening under any circumstances whatever, it is necessary to provide a storage battery in connection with the dynamo, and so to connect the battery that it will never be disconnected as long as the electrolytic cell remains in use.

Following in the train of the storage battery comes another thing which is liable to happen, and which will raise the very mischief with any electrolytic cell to which it occurs. It is the reversal of the dynamo by means of current from the storage battery. If the connections are let alone, there is no danger of such an occurrence; but when somebody "monkeys" with the switchboard connections then there is an opportunity for trouble as follows:

The current may be sent backward through the dynamo while the latter is at rest; the polarity of the field magnets will be changed, or reversed; then, upon starting the dynamo again, the + lead will become — and a current will flow in a direction opposite to which it should pass. The effect of such a thing can be imagined. It means the utter reversal of the electrolytic process, the formation of chlorine in the soda compartments of the electrolytic cell, and the attack and perhaps the destruction (if continued long enough) of the cathode and its containing tank or cell.

It requires only an instant of time, and a very slight current, to change the polarity of a dynamo when all of the conditions are just right, and it is only one more thing to be guarded against by care and skill in taking care of the plant. The storage battery is liable to reverse any dynamo when the conditions come right, but in incandescent lighting the consequences are not as great as in electrolysis, or in plating, hence little attention need be given to the direction of the current for lighting purposes, while it makes all the difference in the world in electrolysis, or metallurgy.

The diaphragm is not alone among the evils which affect electrolytic apparatus. The trouble of keeping a diaphragm in good working condition is no worse, even if as bad, as the task of maintaining anodes in good working condition. Although carbon is not attached by chlorine, it goes to pieces under the combined and long continued action of chlorine and the electric current. Carbon seems slowly to waste away, and the reduction is continuous as long as current passes; indeed, it may be considered a fact that carbon will waste when used as an electrical conductor, whether chlorine is present or not.

It is through this gradual wasting of carbon that it becomes so troublesome to maintain good electrical contacts with the wiring. Even when pieces of carbon are cast into leads, the wasting process goes on and the contact is ultimately destroyed. The process may be reversed and the conducting wire affixed in a hole in the carbon, by casting therein a lead plug around the wire, but it makes no difference, the wasting goes on.

Probably the best way for making contact with carbon is to procure several platinum wires, put them up as a foundation and pile the pieces of carbon on top so as to touch the wire grating and each other. Platinum wire is very expensive, but this is about the only way in which very good contacts can be made to withstand heavy currents of electricity and the action of chlorine gas at the same time.

In a tube, contact may be made by ramming in crushed carbon, the wire meanwhile having been placed in the tube so that the coke will be pounded tightly around it. In the several electrolytic cells where carbon is packed in or around a tube to serve as an electrode the piece of platinum wire can be coiled once around in the space to be filled with coke, then that substance packed down as close as possible. In this manner a good connection can be made, and it will be maintained for a long time, because as the carbon wastes it settles down and packs close together, thus renewing the electrical contacts which may be disturbed or destroyed by the wasting process.

When a piece of carbon is cast into lead, then immersed in chlorine, the wasting seems to begin at the junction of the carbon and the lead, and to penetrate or extend between the two until the electrical contact has been greatly impaired or completely destroyed. For dry work, like the outside of batteries, &c., when not exposed to penetrating liquids or gases, contact with carbon may be made in good shape by plating with copper. This idea has been extended to cover chlorine work, by coppering or leading the carbons, then a coating of enamel is fired on. This method is said to make a contact which is impervious alike to electricity, gas or acid, but I have not seen the process tried sufficiently to determine whether it will be successful or otherwise.

The best material for anodes in sodium electrolysis is undoubtedly platinum; but that element is costly, hence the substitution of carbon, either in the form of pressed and baked plates, tubes, &c., or in the shape of "gas carbon," fresh from the retort. For cathodes almost any metal may be used. Iron fills all demands, and copper is frequently used for that purpose. It is claimed that the disintegration of the anode can be considerably lessened by a particular construction of the electrolytic cell. To secure these results, the electrodes, in a vertically divided cell of course, extend a considerable distance below the diaphragm, and the bottom of the cell is placed at a distance below the bottom of the electrodes, so that the solutions there will be comparatively free from soda or chlorine deposits, and the ions will have room to settle down before becoming strongly saturated where they reach the electrodes.

The materials for diaphragms are various. In some cells porcelain is used, in others cement, while thick paper board (made of wood) or several thicknesses of coarse brown paper answer for the partition between the two parts of the cell. In another cell a film of coagulated blood makes an admirable separation between the two bodies of liquid.

The composition of diaphragm material and the installation of a plant for electrolyses will be described more fully in the next paper of this series.

(To be Continued.)

New Building Material.

A new building material called compoboard, will be manufactured at Chicago. It is thus described by the *Northwestern Lumberman:* It is made of one-eighth inch strips of wood, from three-quarters to 1¼ inches wide, placed between two sheets of heavy strawboard and united under heavy pressure with a strong cement. The process of manufacture is peculiar. Into the machine that molds the board are run two sheets of the strawboard from rolls, one from above and one from below a table onto which are fed from a feeding device the strips of wood. A roller running in a tank of the liquid cement rolls upon the inner surface of the sheets of strawboard, and the three layers of material run together between rolls and into a hydraulic press capable of exerting a pressure of 120 tons to the square inch. Ten feet of the board is stopped automatically for a few seconds in the press, then run out upon a table fitted with cut-off saws, where it is sawed to the desired length. It is then run upon trucks, placed in the dry kiln, and when taken out is trimmed to 48 inches in width.

The strength of the board as compared with its weight is marvelous. The ends of an 18 foot board can be brought together without breaking or warping it. No conditions can warp it. Wall paper is put upon the board, and the finish is as fine as upon any plastered wall. The strong points claimed for the board are: It is not more expensive than first-class plastering. It forms an absolutely air-tight wall. It stiffens a building much more than any coat of mortar and lath can. It is quickly put on and produces no dampness, thus causing no swelling and shrinking of floors and casings. It is light, thus avoiding the dragging down of the house frame, the consequent cracking of walls, and the warping of door frames. It forms a solider, cleaner, warmer, drier wall at no more expense than is involved in the old way.

Extracts from John's Letter.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

Mr. Editor:

The location of a paper or pulp mill industry is of much more importance than is usually recognized. It often happens that a small mill controls the location of larger plants which frequently follow in the home of the smaller; or small mills, with ample room for their first use, have additions made until a large number of buildings are assembled, in form, construction and arrangement unsuited to their use in many ways.

* * *

It seldom occurs in such constructions that necessary care and consideration are taken in regard to light and ventilation, and machine, beater or engine rooms well lighted are often deprived of light and air because of additions. Whenever possible paper and pulp mills should be placed where climate, air, soil, population, school and church facilities help with the mill to make it a desirable and chosen place for employers and employees, with their families, to live. Any place or any kind of building is not good enough for a paper or pulp maker to work in, so long as he must earn a living. It is seldom that these things are given much weight, and very often money decides against its own interests, because it does not look to permanent facilities, which inure to the health and happiness of its employees, and consequently to its own advantage.

* * *

The selection of a building site having been made the manufacturer should take into consideration not only the present needs of the industry in which he is engaged or about to engage, but also the needs in this line for years to come. He should begin at the outset with enough ground to admit of the duplication of the original plant, and also of the erection of warerooms, stock houses, sorting rooms, &c. The first buildings to be erected should be of a kind and so located as to permit additional buildings to go up without in any way interfering with them and with a view of some day having certain railroad facilities added, leaving necessary space for this purpose—for the convenient handling of freight of a paper or pulp mill is a large item. The buildings should have plenty of light in them; the rooms should be high and airy and good ventilation should be secured, as fresh air is the companion to good light and is just as important from a health standpoint; finally, when the buildings are ready, have the ceilings and walls white, and let them be kept so as nearly as it is possible to do so.

* * *

There should be a room provided in every paper mill where tools belonging to the company can be kept and some capable fellow should be charged with their safe keeping, and not only this but with keeping them in proper order—sharp, clean and in good repair—so as to be always ready in a case of emergency requiring their immediate use, and a rigid order should be issued requiring all tools to be returned to the tool room man as soon as they are not wanted. The arrangements should be such that every room can be kept clean; the mill should be so constructed that it can be clean and in good order at all times, as this tends to increase the quality of the output. There should be no dirty, dark, damp or unventilated rooms on the premises.

* * *

There should be adequate provision against fire in the way of construction and location of buildings and separation of departments, to avoid the spread of flames. Attic rooms ought to be avoided, and there should be no space between the upper floors and roof inviting a fire to make headway in, and there should be no small out of the way rooms which cannot at once be reached with water from a hose. In considering the expenditure of money necessary in making a paper or other mill fireproof, it must be remembered that while insurance may be had which will cover loss, it does not make up for the injury sustained by the interruption of business, which in some cases is simply irretrievable, besides losses which affect the employees in the shape of idleness, sometimes a depreciation in the value of the property, which, many times, when lumped together, exceeds the loss which the business itself sustains. Floors above the first are a frequent source of communicating fire from one room to another. A good fireproof floor is made by having brick arches, either solid or hollow, laid with strong cement between iron beams which should support them; the arches may be covered with cement and bedded in the latter may be placed strips of wood 3x3 inches, onto which a floor running at an angle to the iron beams may be nailed; this floor ought to rest directly on the cement, previously levelled to receive it; or as a substitute for the brick arches rolled plates may be had which are arched and which can be supported by I beams conveniently placed and the space filled with concrete, and a floor placed on the top, as described above. Either makes a good, serviceable job, stiffens the building, is easily repaired and is as nearly fireproof as can be desired.

* * *

The roof should be as nearly flat as possible; a good, serviceable one is made of spruce plank, 2 inches thick, planed, tongued and groved or shiplapped, supported by beams 5 or 6 feet apart; this also makes a good ceiling, and should be covered with five or six thicknesses of tarred paper laid with hot pitch covered with clean, coarse gravel while both are hot. A small outlay for repairs will keep this kind of a roof in good order for years, and in case of fire it can be reached outside or inside with water without any chopping, and a fire on this kind of roof is easily and quickly put out.

John.

Consumption of Paper in Turkey.

The consumption of paper in Turkish Asia is quite large. Smyrna appears to be the commercial centre whence the various importations are either forwarded to the interior or else shipped to the various islands of the Archipelago. There being no paper mill in or near Smyrna, the importation of paper takes a great part in the shipping business. It is thought, says an English trade journal, that the erection of paper mills would probably pay. Raw materials seem abundant, for Smyrna rags are well known, and moreover there are trees enough in the country to offer harder or softer fibres, which might be worked into pulp by chemical or mechanical means. The only reason that no one has yet tried the experiment is probably the low price at which German, Austrian and Italian papers can be imported. The import duty is 8 per cent., and if this is added to the importers' profit a mill might prosper if it were economically conducted.

Book and art printing is making a steady progress in the country. The consumption of paper in Smyrna is limited to such sorts as are required in everyday life. They are writings, printings, packings, tissues, millboards, ledgers and commercial stationery, also wall papers. Most European nations participate in this trade and mostly succeed in disposing of their specialties. Great Britain sells best writing and note papers, which for good quality, strength and appearance, are unrivaled; but the consumption is small; as for the masses, low price seems the first and only requirement. For this reason Austrian and German writings are gaining ground by their very low price and elegant appearance. Italy likewise, especially the Milan paper mills, exports this class. The Italian note paper is made from straw and is very bad, but the price makes up for its deficiency and secures large sales.

In packing, printing, and wall papers Germany comes first; Austria, however, competes closely, and often surpasses in quality. This Austrian trade is exclusively in the hands of Vienna export houses, who also do the millboards, which are very cheap, though only of inferior quality. In the last few years the Dutch have made great efforts to import stationery, and especially fine cardboard and visiting cards, and are supported by very active and intelligent representatives. France also imports, but not to a very large extent, as the prices are found very high.

Wall papers are not largely used in Turkish Asia. The common people live in houses with whitewashed or at best coarsely painted walls. In the houses of the rich tapestry takes the part of wall papers. In ledgers and commercial books France formerly did much, but lately Germany is gradually acquiring this trade. Tissue papers formerly came from France, but are now largely bought from Austria. In cigarette papers France holds a monopoly.

There are some good printing offices in Smyrna, which supply the commercial houses and banks with their billheads, circulars and other commercial stationery. The importation of these articles therefore is falling off. Bookbinding, however, is not very far advanced. It is neither carefully done nor does it exhibit much taste. This class of work is therefore very largely imported. Consignments of such goods would no doubt pay, only they must be cheap and well assorted; better still and safer would be the forwarding of sample collections, from which orders for forward delivery could be booked.

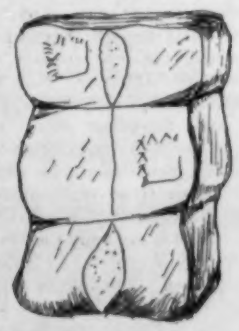
WANTED—BY FIRST-CLASS PAPER MAKER, a position as superintendent or salesman for mill making book and writing; first-class references. P. H., care Journal.

New Inventions—XLII.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

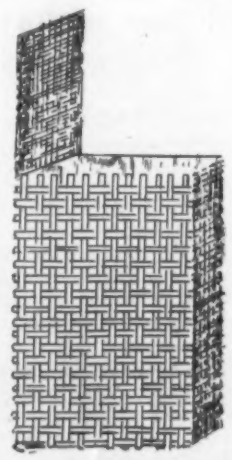
By Geo. Damon Rice.

For a long time attempts have been made to introduce a better method of packing cotton for shipment than that in use at the present time. The system now employed is far better than it was several years ago, yet there is chance for improvement. The cost of shipping the millions of bales of cotton from the South every year is something enormous. The cost would be lessened very much were the bales of cotton more condensed and put in a more convenient shape for handling. Owing to the various sizes of cotton bales the railroad companies have adopted a regular scale for charging, with the result that the smaller the bale containing a given weight of cotton the less the cost of freightage. Thus shippers endeavor to get as much cotton as possible in a small space. The common burlap bale is used very extensively, and is made strong by iron straps; but the cotton cannot be compressed very solidly in this kind of bale. Furthermore, the burlap often tears, and cotton is lost through the opening. Burlap bags are used to some extent, but the cotton cannot be packed very tight in these. The seams frequently open after a short use. Metal coverings have been tried, but have proven too heavy; leather wrappings are too costly, so are canvas. Fireproof materials, patent fabrics and the like have been experimented with, but none seem so promising as the new kind of baling made from paper pulp.



Ordinary Burlap Bale of Cotton.

A view of a bale of cotton as now baled is shown in the above drawing. The bale is clumsy; there are one or two breaks in the burlap, and the whole thing is quite unsatisfactory. The more the bale is tossed about during shipping the looser it becomes, and it may eventually fall to pieces. A view of the new paper bale is shown next.



Paper Cotton Bale.

The process of making the paper bales consists in drawing flat strips of paper from the pulp. The strips are an inch wide. The prepared pulp is drawn from between rollers in a wide sheet, and this sheet is divided into strips by a series of knives. The knives cut into the sheet before the latter is hard, and so the edges of the strips are made smooth. Conveying rollers carry the strips along a graduated pressure, making the strips solid. As they pass through the rollers and cylinders a coating of sizing is applied, and this imparts smoothness and durability to the material. The strips are wound onto spools as fast as they emerge from the machine; they are dry when they get this far and can be readily wound. Next they are formed into a great warp and woven like cloth. A patented device raises and depresses the warp threads so that the attendant may feed in the strips, which run in the opposite direction. The weave is very coarse, but the meshes are close enough together to prevent the cotton from working through. Next the woven strips are cut out in form required to make the bale. The edges are lapped and spliced and the work is done. The form of the bale is obtained by shaping the material around a pattern. The pattern can be round or square.

The finished bales are light and tough; they are also very cheap in that they can be used many times. They are very powerful in structure, so that an immense hydraulic pressure can be brought to bear upon the cotton when packing the bales. The freight handlers can insert their hooks in the meshes and handle the bales without injury to the latter.

Cost Per Horse Power.

"Cost of an Indicated Horse Power" was the title of a paper read by Decoursy May, of Niagara Falls, before the American Society of Mechanical Engineers. Reliable data as to the cost of operating steam plants he found scarce, due partly to concealment, but usually to ignorance. Reviewing a few estimates and papers which he found on the subject he reached the conclusion that one indicated horse power cannot be produced for 365 days of twenty-four hours each for less than $40, with coal at $5 per ton of 2,240 pounds.

From such data as he was able to collect, allowing 5 per cent. for interest on plant, 5 per cent. for depreciation of plant, 1 per cent. for insurance and 1½ per cent. for taxes, making no allowance for rental or interest on the land occupied by the plant or cost of water, Mr. May presents a tabulated statement of the cost of running various types of power, both continuously and for only 10½ hours per day and with coal at various prices.

For 308 days of 10½ hours each and with coal at $2 per ton of 2,240 pounds, the cost of one indicated horse power is estimated by Mr. May as follows: Triple expansion pumping, Allis, 20 revolutions, $31; triple expansion, without pumps, Allis, 50 revolutions, $16; compound mill, best engine, $17; compound mill average, $22; compound electric light average, $78; compound trolley, $29; triple expansion trolley, $26; condensing mill, $25; non-condensing, 50 to 200 horse power, $49.

With coal at $4 per ton the cost is increased from $4 to $12 per horse power.—*Industrial World.*

A varnish which will resist rust may be made by dissolving half a pound of asphaltum and the same quantity of pounded resin in about 2 pounds of tar oil. Mix hot in an iron kettle, taking care to prevent any contact with the flame. When cold the varnish is ready for use.

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1892 1894

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COMPARATIVE PRODUCTION
For ONE DAY:
May 1st, 1892, ... 1,199,000
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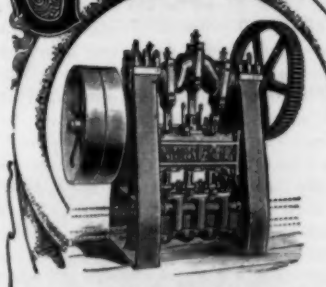
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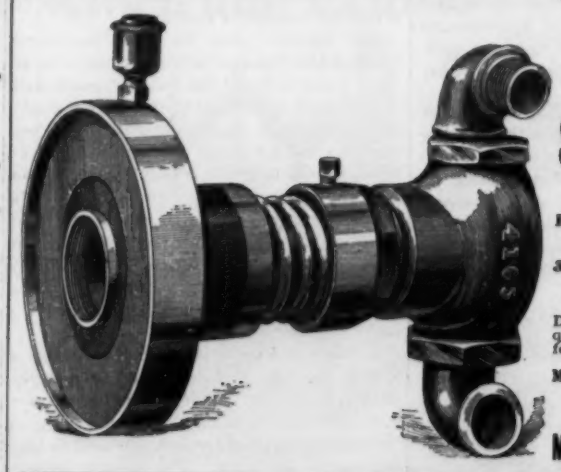
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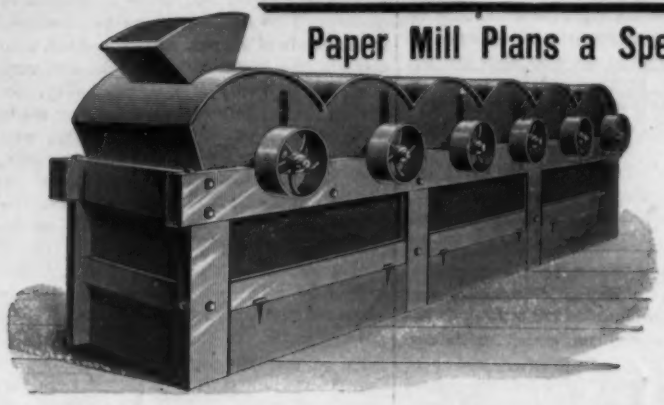
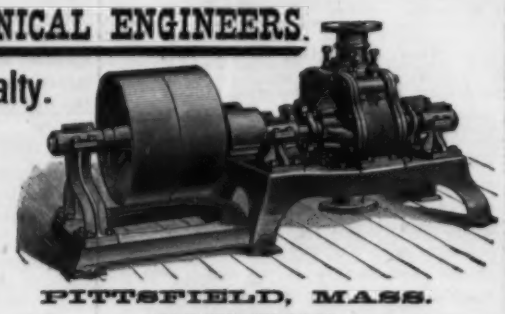
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Imports and Exports.

IMPORTS AT NEW YORK.

FOR THE WEEK ENDED JUNE 29, 1894.

An. Colors..	474	$31,865	Paper.....	420	$22,423
Alum.....	76	378	Steel Pens...	3	1,643
Alum's Cake	—	—	Stationery...	15	508
Bl. Powders	707	12,835	Slate Pencils	28	228
Soda Ash...	5,402	15,267	Clay.....	—	2,424
Soda, Caus.	375	8,107	J'te B'ts, &c.	—	—
Soda, Sal....	—	—	P. Hangings	27	1,671
Soda, Hypo.	—	—	P'p'r Stock..	4,054	27,562
Ultramarine	37	1,816	Terra Alba..	100	229
Books.....	385	34,064	Waste.....	—	—
Newspapers.	238	9,314	Wood Pulp..	540	4,614
Engravings.	65	4,994			
Ink.....	3	129			
Lead Pencils	13	1,877	Totals....	12,957	181,508

Imports General Merchandise for the week ended June 29, 1894.....$5,276,477

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO JULY 3, 1894.

Whence Imported.	Rags.	Old Papers.	Chemical Fibre.	Ground Wood.	Manilla Stock.
	Bales.	Bales.	Tons.	Tons.	Bales.
Alexandria...	1,249	....	....	....	....
Antwerp.....	296	250	678	....	8,684
Aspinwall....	90	....	....	....	....
Bordeaux.....	548	....	....	....	....
Bremen.....	672	25	6	....	5,425
Bristol.....	....	....	....	....	2,871
Buenos Ayres.	123	....	...	....	....
Calcutta.....	....	....	....	....	2,797
Cent. America	60	....	....	....	....
Christiania....	....	....	300	....	474
Copenhagen..	358	....	1,197	....	1,309
Dublin.....	....	186	....	....	....
Dundee.....	....	....	....	....	658
Dunedin.....	....	....	....	....	183
Fiume.....	....	....	99	....	....
Geestemunde.	252	....	....	....	1,309
Genoa.....	....	....	...	....	3,256
Glasgow.....	394	77	....	....	243
Gothenburg..	....	....	99	....	....
Hamburg.....	1,238	220	400	....	3,005
Hamilton.....	....	....	....	....	42
Hiogo.....	9,001	....	....	....	....
Hong Kong...	48	....	....	....	....
Hull.....a	2,320	185	922	....	10,595
Kobe.....	27,285	....	....	....	....
Leghorn.....	1,684	....	....	....	....
Leith.....	....	150	....	....	128
Liverpool.....	625	840	....	....	13,692
London.....	3,319	1,423	20	....	7,691
Marseilles....	86	....	....	....	473
Nassau.....	48	....	....	....	....
Newcastle....	....	73	....	....	3,081
Rio.....	20	....	....	....	....
Rotterdam....	827	20	517	....	6,615
Southampton.	....	....	....	....	160
Stettin.....	2,372	....	596	....	6,681
Trieste.....	....	....	49	....	....

a. Including 347 bales cotton waste.

NEW YORK IMPORTS.

FROM JUNE 27 TO JULY 3, 1894.

Paper Stock.

Lewy Brothers, Lepanto, Antwerp, 192 bs. bagging.

Burgass & Co., Friesland, Antwerp, 28 bs. bagging.

James Pirnie, Rhynland, Antwerp, 406 bs. bagging.

Oelrichs & Co., Stuttgart, Bremen, 6 bs. manillas.

F. Bertuch & Co., Amerika, Copenhagen, 88 tons chemical fibre.

J. Libmann & Co,, Norwegian, Glasgow, 67 bs. rags.

Burgass & Co., by same, 56 bs. manillas.

G. Hamilton, Lyndham, Hamburg, 12 tons chemical fibre.

Kugelmann & Co., Bovic, Liverpool, 12 bs. bagging.

James Pirnie, by same, 385 bs. bagging, 100 bs. rags, 261 bs. manillas.

J. W. Mason & Co., by same, 125 bs. manillas.

Darmstadt & Scott, Amerika, London, 56 bs. rags.

John H. Lyon & Co., by same, 48 bs. bagging.

Augustine Smith & Co., by same, 66 bs. papers.

T. S. Todd, Obdam, Rotterdam, 187 bs rags.

F. Bertuch & Co., Hekla, Stettin, 332 bs. bagging.

Paper.

E. & H. T. Anthony & Co., Bohemia, Hamburg, 1 cs.

L. De Jonge & Co., by same, 30 cs.

G. W. Sheldon & Co., by same, 1 cs.

Engel & Epstein, Russia, Hamburg, 19 cs.

B. Lawrence Stationery Company, by same, 2 cs.

E. & H. T. Anthony & Co., Obdam, Rotterdam, 14 cs.

G. W. Sheldon & Co., by same, 15 bs.

R. F. Downing & Co., by same, 10 cs.

W. Pangstein, by same, 1 cs.

J. Majert, by same, 1 cs.

O. F. Melvin, Rhynland, Antwerp, 6 cs.

Kupfer Brothers, by same, 7 cs.

E. G. Soltmann, by same, 4 cs.

L. C. Wagner & Co., by same, 3 cs.

G. W. Sheldon & Co., by same, 45 cs.

W. Heuermann, Normannia, Hamburg, 11 cs.

M. Strouse & Co., by same, 3 cs.

Marcus Ward & Co., Britannic, Liverpool, 33 cs.

G. W. Sheldon & Co., Spaarndam, Rotterdam, 37 cs.

L. De Jonge & Co., Moravia, Hamburg, 2 cs.

R. F. Downing & Co., by same, 20 cs.

American Tobacco Company, La Normandie, Havre, 32 cs.

I. Dickinson & Co., Umbria, Liverpool, 23 cs.

IMPORTS of Rags and other Paper Stock at the Port of New York for the month ended June 30, 1894, from the following named Ports, showing Quantities from each Port.

Whence Imported.	Rags.	Old Papers.	Chemical Fibre.	Ground Wood	Manilla Stock.
	Bales	Bales	Tons	Tons	Bales
Antwerp.....	—	—	9	—	2,199
Bremen.....	140	25	6	—	1,495
Bristol.....	—	—	—	—	751
Buenos Ayres.....	97	—	—	—	—
Copenhagen.....	—	—	547	—	456
Dundee.....	—	—	—	—	47
Glasgow.....	106	—	—	—	56
Gothenburg.....	—	—	40	—	—
Hamburg.....	60	117	86	—	549
Hiogo.....	1,862	—	—	—	—
Hull.....	514	—	33	—	1,810
Leith.....	—	—	—	—	138
Leghorn.....	164	—	—	—	—
Liverpool.....	206	100	—	—	3,174
London.....	388	66	—	—	325
Newcastle.....	—	—	—	—	657
Rotterdam.....	347	29	103	—	1,918
Stettin.....	181	—	—	—	508
Totals.....	4,185	337	774	—	14,173

Special List of Imports of Paper Stock at the Port of New York for the month ended June 30, 1894.

Importers.	Rags.	Old Papers.	Chemical Fibre.	Ground Wood.	Manilla Stock.
	Bales	Bales	Tons.	Tons.	Bales
Atterbury Brothers.	70	....	....	....	....
Avis, W. A., & Co...	800	....	....	....	....
Bertuch, F., & Co...	....	....	602	....	322
Burgass & Co.....	97	29	....	....	865
Castle & Gottheil ...	186	....	51	....	258
Darmstadt & Scott..	53	41	....	....	....
Dutton, H., & Co....	....	....	....	....	306
Hamilton, G.....	....	....	12	....	....
Hatton, E., & Co	....	....	....	....	640
Helwig, R.....	....	....	103	....	....
Herbst Brothers....	1,092	....	....	....	....
Goldman, S.....	....	....	....	....	148
Jessup & Moore Paper Co.....	38	....	....	....	....
Kugelmann & Co....	....	....	....	....	222
Lewy Brothers.....	907	....	....	....	1,168
Libmann, J., & Co....	122	....	....	....	....
Lyon, John H., & Co	....	....	....	....	48
McInnes, H.....	....	....	....	....	234
Mason, J. W., & Co..	....	....	....	....	2,799
Morrison, H., Jr.....	....	....	....	....	79
Oelrichs & Co.....	....	....	....	....	125
Overton, R. H., & Son	....	....	....	....	138
Paper Fibre Co	....	....	....	....	47
Perkins, Goodwin & Co.....	....	....	....	....	182
Pirnie, James.....	190	....	....	....	2,965
Rau, G.....	92	....	....	....	....
Salomon, F., & Co..	200	142	....	....	1,111
Solomon, L. A., & Brothers.....	5	....	....	....	....
Smith, Augustine, & Co.....	....	66	....	....	....
Stratford, George ..	....	....	....	....	117
Todd, T. S.....	187	....	....	....	....
Train, Smith & Co...	116	50	....	....	2,402
Zoller, Charles.....	....	....	6	....	....
Totals.....	4,185	337	774	....	14,173

BOSTON IMPORTS.

FROM JUNE 28 TO JULY 4, 1894, INCLUSIVE.

Paper, &c.

Wm. Guild & Co., Catalonia, Liverpool, 6 bs. periodicals.

J. L. Fairbanks & Co., by same, 1 cs. blotting paper.

W. N. Proctor & Co., by same, 1 cs. paper hangings.

Gregory & Brown, by same, 1 cs. paper hangings.

Irving & Casson, by same, 1 cs. paper hangings.

A. H. Davenport, by same, 1 cs. paper hangings.

Paper Stock.

Train, Smith & Co., St. Ronans, London, 62 bs. new rags, 97 bs. waste paper.

Wheelwright Paper Company, by same, 79 bs. waste paper.

J. B. Moors & Co., by same, 64 bs. rags, 15 bs. waste papers, 245 coils manillas.

J. B. Moors & Co., Oranmore, London, 299 bs. flax waste.

Sizing.

J. W. McClintock, Catalonia, Liverpool, 248 bags.

Bleaching Powder.

J. L. & D. S. Riker, Philadelphian, Liverpool, 264 cks.

Fuerst Brothers, Catalonia, Liverpool, 88 cks.

Soda Ash.

Wing & Evans, Catalonia, Liverpool, 77 cks., 800 bags.

J. L. & D. S. Riker, Philadelphian, Liverpool, 668 bags.

A. Klipstein, by same, 26 cks.

Order, by same, 20 cks.

Wing & Evans, by same, 93 cks., 400 bags.

Refined Alkali.

J. L. & D. S. Riker, Philadelphian, Liverpool, 86 cks.

Soda Crystals.

Jerome Marble, Catalonia, Liverpool, 240 bbls.

Crude Sulphur.

Linder & Meyer, Philadelphian, Liverpool, 1,336 bags.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED JUNE 30, 1894.

Paper.

Wolf & Co., Bohemia, Hamburg, 72 cs. pasteboard.

A. Hartung & Co., by same, 30 cs.

EXPORTS of Paper, &c., from New York for the Week Ended July 3, 1894.

BOOKS, cases, to British West Indies, 9; Colombia, 4; Liverpool, 13; Venezuela, 2; London, 44; Newfoundland, 9; Brazil, 1; British East Indies, 1; British Honduras, 1; Bremen, 3; Beyrout 1; Central America, 1; Cuba, 2; Liberia, 1.

PAPER, to Cuba, 324 pkgs.; British West Indies, 229 pkgs.; London, 221 cs.; British Australasia, 664 pkgs.; Central America, 36 pkgs.; Hamburg, 67 cs.; Mexico, 100 pkgs.; Newfoundland, 16 rolls; Brazil, 134 pkgs.; Porto Rico, 509 pkgs.; Colombia, 44 pkgs.; Antwerp, 2 cs.; Bristol, 48 pkgs.; British Honduras, 90 pkgs.; Bremen, 4 cs.; Canada, 1 cs.; Hayti, 1 pkg.; Danish West Indies, 15 bdls.; Liberia, 25 pkgs.; Leipsic, 4 bls.; Schonenwerd, 12 pkgs.

STATIONERY, cases, to London, 39; British West Indies, 3; Central America, 9; Mexico, 11; Hayti, 2; Newfoundland, 4; Cuba, 28; Colombia, 7; Siam, 1; Brazil, 14; British Honduras, 1; British Guiana, 1 cs.; British Australasia, 19; Ecuador, 1; Porto Rico, 14; Peru, 1; San Domingo, 1 cs.; Southampton, 1 cs.

STRAWBOARD, cases, to Cuba, 68.

CARDBOARD, packages, to Mexico, 2.

PAPER BOXES, cases to British Australasia, 15.

AGGREGATES AND VALUES.

Paper, reams.....	—	—
Paper, pkgs.....	2,245	$18,722
Paper, cases.....	399	4,301
Books, cases.....	87	3,881
Stationery, cases.....	147	7,645
Rosin, bbls.....	7,351	20,120
Totals.....	10,229	$54,669

Exports General Merchandise for the week ended July 3, 1894..... $7,238,485

The Price of Bleaching Powder.

Some surprise and considerable comment followed the announcement of a reduction in the price of bleaching powder to 1¼ cents per pound for shipments during July. Various causes are assigned for the reduction at this time, but as the United Alkali Company has vouchafed no explanation of its course the reasons assigned in the trade are mere surmises. There are various features in the situation which may account for the action taken, and whether these be the moving cause or not they are of interest. It is thought by some that the recently increasing imports of bleach from the Continent was the prime cause for the action of the English makers.

That they do not relish this competition for the American trade may be accepted for granted, as formerly they had this trade all to themselves. When Continental bleach was first being introduced here by the agents of the makers they had a natural prejudice to overcome, and as some makes were found to prove of inferior quality, the sale did not increase rapidly until it became well known, which makes were fully up to requirements, and latterly these have been in steady demand, while the inferior have been withdrawn from this market. The price of Continental bleach has been the same as the English, and the agents have followed the cut, now naming 1¼ cents per pound for July shipments.

Another feature in the situation which is assigned by some as the cause for the reduction, is the large supply in the possession of manufacturers, it being believed they have taken this means to reduce their surplus at a season when it would prove expensive to carry the same by reason of deterioration of quality. These are the principal conditions existing which would be likely to influence the action taken, and it may be due to one or both, or possibly the reason may be entirely foreign to either. At any rate these are the conditions confronting the English makers and are generally believed in chemical circles as prompting the action taken.—*Oil, Paint and Drug Reporter.*

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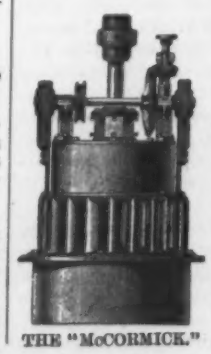
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NEW YORK: SATURDAY, JULY 7, 1894.

AN improved process and apparatus for multiple effect evaporation is described and illustrated on the first page of this issue of THE PAPER TRADE JOURNAL. The process, briefly described, consists in feeding the dilute liquor, to be concentrated, continuously into the coolest effect of the series, thence through the progressively hotter effects in succession, the concentrated liquor being withdrawn continuously from the hottest effect.

Now that the tariff bill—with amendments—has passed the Senate its fate in the House of Representatives is a matter for conjecture. Of course it will go to a conference committee which will try to patch up the differences between the two bodies of legislators, or maybe, after some coquetting, will "lick it into shape" without serious interference with its present form. If it encounters vigorous opposition and becomes changed to any material extent the fight over it may bring it to a "lame and impotent conclusion."

THE proportions which the great railway strike and boycott are assuming, and the poor prospect of a speedy settlement, are straining public patience. It is unnecessary to go over the details of the movement here; they are already familiar to the reading public. What now fixes the attention of the people is that the differences between a corporation and its employees is in a fair way to unhinge the business machinery of the nation and drag the Government into unprecedented positions, which, when a sober second thought prevails, will be generally regretted. The Pullman strikers may at the beginning have had genuine grievances and there was a disposition in many quarters to give them the benefit of the doubt. It was at best, however, a very local disturbance, and can in no way be made to justify the widespread trouble and interference which it has now assumed by the willingness of outside organizations to spring to their aid by boycotting third parties.

THE right of the American Railway Union to precipitate itself into this private dispute and lift it to the importance of a national issue will not be conceded, nor ought its demands upon persons not connected with the original questions at issue be submitted to. It is the undeniable privilege of any concern to determine for itself how and with whom it shall do business. It is not charged that any difficulties were awaiting settlement between the railway companies and their employees, or that any cause for striking exists. The boycott, as it is called, is purely a sympathetic affair, attended by all of the evils which such sympathy begets; or, what is more probable, it has been inaugurated by certain vain and irresponsible persons to make a show of their power for mischief. The apparent end to be gained, for the accomplishment of which it is threatened that all of the tremendous machinery of organized labor will be brought into play, is pitifully insignificant, for as far as can be seen no great or vital principle, no far reaching and important element of justice is at stake.

THE attack upon the railroads cannot be justified, and if the larger threats to call out organized labor in every field of employment between the Lakes and the Pacific Coast, and if necessary to gain their end to carry the war into the East and South, shall be in any degree carried out the chief sufferer will at last be organized labor itself, for it will certainly come to pass that men will demand laws and compel their enforcement to protect themselves, their families and their interests, both as citizens and individuals, from attacks so wasteful, wicked and misguided as they are now threatened with. The prevailing business conditions make men intolerant of fighting for fighting's sake; but it may be that the best and most lasting effects of the lesson would be obtained by letting the strikers break themselves upon the wheel of adverse and unconquerable conditions, as did the coal miners. Self inflicted injuries do not feed pride, but they stick well in the memory. The country could perhaps afford to suffer considerably if out of the trouble a little common sense and a considerable more foresight and justice could be infused into the methods of organized labor.

WE had occasion not long ago to refer to the valuable work of the German Export Unions in disseminating information regarding German manufactures. Adjuncts of the same work, and most efficient in their co-operative value, are the Export Sample Exhibitions found in many of the principal trading centres of the empire. One at Hamburg has proved of immense benefit to exhibitors, large numbers of whom live in inland manufacturing towns. It is said that the Russians are about to follow the example of the Germans by opening sample exhibitions in various continental cities, and the initiative of such a movement seems to have been taken by Englishmen in the establishment of an exhibition of specimens of goods of British manufacture at Port Said on the Suez Canal. All of these various activities are significant pointers for American manufacturers who may desire to build up an export trade. Discussion of methods and harmonious action are the chief factors in such a movement, and they can be inaugurated none too soon.

PAPER STOCK IMPORTS.

The imports of rags and other paper making fibres—jute butts excepted—at the port of New York during the month ended June 30, as reported, amounted to 18,695 bales and 774 tons, the difference in quantities compared with the corresponding month of 1893 being a decrease in rags of 12,226 bales, in old papers a decrease of 424 bales, and in manilla stocks a decrease of 2,259 bales. There was no wood pulp imported during June, and of chemical fibre 206 tons more than the May imports were brought in. The appended tabulation shows the quantities of paper making materials of the kinds mentioned which were reported as having been imported during the month of June for the last five years:

	1894.	1893.	1892.	1891.	1890.
Rags.....bales.	4,188	16,411	5,814	6,579	13,013
Old Papers.....	337	761	346	1,133	436
Manilla Stocks..	14,173	16,432	23,255	6,837	17,215
Wood Pulp,tons.	....	....	....	....	....
Wood Fibre.....	774	2,039	1,572	1,199	1,867

The arrivals from the different ports were as follows: Antwerp, 9 tons chemical fibre, 2,199 bales manillas; Bremen, 140 bales rags, 25 bales old papers, 6 tons chemical fibre, 1,495 bales manillas; Bristol, 751 bales manillas; Buenos Ayres, 97 bales rags; Copenhagen, 547 tons chemical fibre, 456 bales manillas; Dundee, 47 bales manillas; Glasgow, 106 bales rags, 56 bales manillas; Gothebnurg, 40 tons chemical fibre; Hamburg, 60 bales rags, 117 bales old papers, 36 tons chemical fibre, 549 bales manillas; Hiogo, 1,882 bales rags; Hull, 614 bales rags, 33 tons chemical fibre, 1,810 bales manillas; Leghorn, 164 bales rags; Leith, 138 bales manillas; Liverpool, 206 bales rags, 100 bales old papers, 3,174 bales manillas; London, 388 bales rags, 66 bales old papers, 325 bales manillas; Newcastle, 657 bales manillas; Rotterdam, 347 bales rags, 29 bales old papers, 103 tons chemical fibre, 1,913 bales manillas, and Stettin, 181 bales rags, 598 bales manillas.

Watermarks.

BY DANDY.

This is the season of discontent and summer bachelors. A member of the New York paper trade, who is now in that classification, went to his empty home in Brooklyn one night this week and had with him only one match. This he did not discover until after he was in the house, and to provide for emergencies he left the light burning.

This attracted the attention of a district messenger, who in turn notified the police. The "finest" rang the paper man's bell, but the p. m. was sleeping the sleep of the just and heard it not. They woke up the neighbors, went to the roof of the adjoining house, to the roof of the slumberer's house, and breaking open the scuttle, descended fully prepared to capture the burglars who were supposed to be at work. They discovered a bald-headed, long-moustached man, who was "snoozing" at forty miles an hour, and when they woke him he was simply thunderstruck.

Yet the "Judge" says that he is a light sleeper! I don't believe it; but on this occasion he was a sleeper by a light.

As a rule the members of the paper trade cash any checks which come to them just as quickly as they can. That is right, and a New York court has just decided that a man cannot keep a check nine days, and when the maker fails expect to get good money from the indorser. For the benefit of all, I give a history of the case.

A man named Woodruff, of Asbury Park, paid on August 22, 1887, to Clayton E. Sweet, to whom he owed money, a check for $273.45. Sweet turned the check over to Croft C. Carroll, a dentist, to whom he owed a bill. Carroll did not present it at the bank until August 31. On that day Coleman had failed and the check was worthless. Carroll sued Sweet for the amount of his bill. The suit has been tried three times and been taken twice to the General Term and once to the Court of Appeals at an expense of $1,000 or more. The last trial was before the Superior Court, of this city, this week. The judge decided yesterday that, by reason of the neglect of Carroll to present the check, Sweet's liability as indorser was discharged, and, that having been discharged from liability on the check, he was likewise discharged from liability on the original cause of action.

In other words the "c'ot" holds that Carroll should have "corralled" the money at once, and, not having done so, he must now take the bitter without the "Sweet."

Several members of the New York trade went down on the Long Island shore on a fishing excursion on the "Fourth." They didn't get any fish, but they got seasick, sunburned and generally used up. They had a good time, and the Scotchman's speech, the Irish sergeant-at-arms' jig and the German's "Oh! My!" furnished plenty of fun for all hands.

It is said that the responses which have already been made to the notices of the meeting of the A. P. M. A., at Saratoga, indicate that there is to be a good attendance. It is to be hoped that there will be, and that the proceedings may be full of life.

There are to be no side shows under the official wing of the organization. There will be no limit on the usual unofficial ones, however.

Trade Talks.

H. C. Hulbert, of H. C. Hulbert & Co., 53 Beekman street, New York—You want my ideas as to the present strike and strikes in general? Well, suppose we confine it to the Pullman strike, so called. One thing about it is sure—it can result in only one way, and that is, in favor of the Government. This strike is not a question between the Pullman Company and the strikers. That is where so many make a mistake.

Now, I have been a director in that company since 1881 and know that what I say is true. Nobody has any idea of the enormous amount of work that it does. We not only make Pullman carc but also freight, including box and refrigerator cars, electric and elevator cars and others. We own and control nearly 3,000 cars and last year carried 5,673,129 passengers over 206,453,796 miles of railroad. We operate over 126,975 miles of railroad, and the total number of persons in the employ of the company was 14,635.

When the strike began we had in our employ 5,800 men, and it soon became a question between shutting down the works entirely or reducing wages. We chose the latter course, and reduced wages 22½ per cent. We wanted to take care of the men, feeling it to be our duty to take care of them; but we could not afford to pay them former wages. We therefore reduced wages and gave them the use of our plant and our capital in order to keep them at work. We gave up our entire profit to them; we gave up our administration costs, *i. e.*, salaries of officers, and we furnished everything at cost. Of course we expected this all back in our returns for our cars. More than that, these strikers are living in our houses, from which we receive a percentage of 3½ per cent. We allow them to remain there. We have not molested them or dispossessed them. Could we do more?

Mr. Pullman feels very badly about this strike. He refused to believe that the men would strike after he had treated them so well. It has been the dream of Mr. Pullman's life to care for his men in every way possible. He has taken a great interest in them, and many are the testimonials he has received showing this. It is charged against the company that no land or house can be bought in Pullman. That is so, and there is a reason for it. It was determined that there should never be any drinking saloons or houses of ill fame within its borders. The men are not compelled to live there, for outside of Pullman there is plenty of land in Hyde Park (in which it is situated), where homes and land can be bought for a low figure. Look at the pictures on these walls. Here are hotels, gas houses, churches, dwellings and stores, where provisions, wearing apparel, &c., can be bought at reasonable figures—at one-half what you can buy them for in New York. In fact, the proprietors are compelled to sell low. Extortion in any sense will not be tolerated. Here is a picture of Mr. Pullman, the man who has accomplished all of these things and whose life has been spent in trying to give his men an ideal life and surround them with more than ordinary comforts, and yet the laboring men are writing him all sorts of threatening letters, saying that if he does not end this strike he will be killed, and calling him all kinds of names. I have read some of the letters. Does Mr. Pullman look like a man who deserved these epithets? Oh, no! Well, this American Railway Union had just whipped the Great Northern Railway, and did it completely, and they expected the same result in the present strike. The Union had no other way by which to reach the railroads except through the Pullman Company, and they gave that as an excuse and went out, and that is all that there is about it. The Pullman Company has no defense to make of itself. It defies any man to put his hand upon a place in it that is rotten. Every dollar of its stock represents 100 cents paid in, and I know that for every dollar's worth of stock I bought I paid 100 cents.

The strike is senseless, foolish and unjustified. It is a crime against the Government and a wrong against every man in the United States. It is a wrong against every citizen and every merchant, for it cuts off the revenue of the laboring man and also raises the cost of all food products which have to be transported from the West, and it increases the cost and difficulty of transportation. Indeed, it is a question if it does not mean anarchy or civil war—and when I say civil war I do not mean it in the same sense or speak of it with the same feeling as Mr. Debs. There is only one way out of it, and that is for the railroads to win; they must win. To this result I believe the action taken by Mr. Cleveland will do much. I believe him to be a man of nerve and that he will not step back from the steps he has taken.

To a certain extent I believe in labor unions and the right of laboring men to combine for self protection, but they have no right by force or intimidation to deprive others who wish to work of their right to labor. For instance, I have two porters in my employ and I discharge them. I hire two others in their places. What right have the first employees to come in here and knock the others down or prevent customers from coming into my store?

Take another case. A few years ago I was engaged building a house. I had contracted with one man to do one kind of work and another to do another kind. With one man named Zipp I had contracted for the stairwork and trims. Soon I began to hear "strike" whispered about, but I paid no attention to it. In a short time a striking delegate came to me and said: "You must discharge that man or we shall strike." "Why?" "Because he is a non-union man," I argued with him, but it was of no avail. They struck. Every day the men came and stood about the house, but there was no work. I must discharge Zipp. I said: "It is wrong, because you would compel me to break my contract with Mr. Zipp, and again Mr. Zipp would sue me for $3,000 or $4,000 damages. Well, I gave them until the next Monday morning to go to work, and when it came they were all there.

A number of men were engaged in building an iron fence around the house. A delegate came to me and said: "You must discharge that man," indicating a certain one. "What for?" "He is not a union man." I said: "I have nothing to do with this fence. Go and see the iron man who contracted to build it." "But you have got something to do with it, and if you don't discharge that man we'll soon show you," was the reply. I need not repeat the words I then used, but they were expressive and emphatic, and I told that man to get or I would put him out. He got as I approached to put my threat into execution.

Now, to show the mercilessness of the labor unions; one of these men replied when I asked him if he wanted to work: "Yes, but I don't dare to." I told him to go ahead and I would protect him, and I would have done so if it had taken all the men in Brooklyn. He told me that his family were starving, and that while the union promised to give him money whenever he struck, yet it was only a few cents, which would not keep himself and family in food.

Now the strikers are asking the Pullman Company to arbitrate, but that of course we will not do, for we have nothing to arbitrate. We are doing nothing and saying nothing, and they do not know what to do in consequence. If men do not want to work they surely have a right to leave off working, just the same as we have the right to hire or discharge any man we choose. If they cannot afford to work for the wages we can afford to pay they have a right to go elsewhere. We felt that we ought to treat the men right and we think we did, but we could not run our works at a loss and pay the usual wages. We told the strikers the whole state of affairs, and even offered to show them our books in support of our statements, but they simply scouted the offer and turned their backs upon us and said the books were falsified.

Mr. Cleveland is justified in his course under the Inter-State Commerce law, and I think it will go a great way toward breaking up the strike. In fact, I think that if we did not have a Governor in Illinois and a Mayor in Chicago with anarchistic sympathies and tendencies the strike either would not have occurred, or much would be done by State and city authorities to restore order. If the railroad companies fail—if they are beaten—they must pay us for breach of contract, and either way it means a heavy loss upon them, upon the laboring man and upon the country at large.

Changes, Removals and New Firms.

W. D. Cox, publisher, Bryan, Tex., has sold out.

A. A. Foote, publisher, La Veta, Cal., has sold out.

Buchanan & Falconer, printers, Bryan, Tex., have sold out.

C. Braund & Co. have opened a stationery store at Victoria, B. C.

Paul J. Stech, printer and publisher, New Carlisle, Ohio, has sold out.

Mrs. S. M. Raper has opened a book and stationery store at Nanaimo, B. C.

V. D. Eddy, publisher, Rush City, Minn., has been succeeded by Charles Elmquist.

J. H. Murphy & Brother, dealers in books and stationery, Newton, Kan., have sold out.

Martin Cashin, of the Cashin Card and Paper Company, Springfield, Mass., has retired.

A joint stock company at Saltcoats, Assiniboia, has begun the publication of a weekly paper called the *Assiniboine*.

Worthington's Magazine, Hartford, Conn., suspended publication with the June number.

Omaha, Neb., has a new monthly called *Western America*, published in the interest of irrigation.

J. W. Mahaffey, publisher, Miltonvale, Kan., has been succeeded by Mahaffey & Roberts, at Green, same State.

The plant of the *Daily News*, Bristol, Tenn., has been purchased by C. B. Cook and E. H. Dove for $2,475 at public sale.

The *Pacific Canadian*, a weekly newspaper, Westminster, B. C., has been sold to A. H. Howells, of the Mission City *News*.

The D. C. Wharton Smith Company is the name of a new concern which will manufacture paper wall hangings at Conowingo, Md. The firm has bought out the plant of

Yerkes, Jones & Co., Philadelphia, Pa., and as soon as the sampling is done will remove the machinery to Conowingo, where the equipment will be increased by the addition of other machinery.

A company has been formed for publishing purposes by W. C. Lemmerman, J. A. Hampton, W. K. Jackson and others at Inverness, Fla.

A new paper to be called the Prince Albert *Advocate* will soon be published by the *Advocate* Printing Company, Prince Albert, Saskatchewan, N. W. T.

The *Sentinel* Publishing Company, Winston, N. C., has been incorporated to continue the publication of the *Sentinel*. Wm. F. Burbank is president, Allen S. King vice-president, and J. B. Whitaker secretary-treasurer. Capital stock, $10,000.

The Manhattan Music Publishing Company, New York, has been incorporated to publish musical compositions; capital, $750, and directors, H. H. Hayes and Paul Barnes, of New York city, and M. F. Burke, of Brooklyn.

The Rogers & Sherwood Printing Company, New York, has been incorporated with a capital of $1,000. Directors, Annie E. Rogers and William Cogswell Rogers, of New York city, and Lambertson Sherwood, of Bloomfield, N. J.

Walther & Co., manufacturers of coated paper, New York, who were recently burned out at 65 Duane street, and who opened a temporary office at 60 Duane street, have now located at 87 Walker street.

The Bradley Cordage Company, Dayton, Ohio, has been incorporated by George Bradley, Alfred Bradley, Charles H. Spencer, Andrew S. Frazer and Charles Wuichet. The capital stock of the company is $150,000.

The People's Co-operative Publishing Company, Dayton, Ohio, has been incorporated with a capital stock of $10,000. The incorporators are: J. Steward, Edwin H. Parker, D. C. Hoffman, Geo. Stoll, Arthur C. Mitchell, John C. Cox and James H. Morgan.

George Routledge's Sons have been incorporated to publish books and magazines in New York city; capital, $250,000, and directors, J. L. Blamire, C. N. Judson and Willis Fowler, of New York city; D. J. Winkelman, of Hoboken, N. J., and C. H. Wheeler, of Brooklyn.

The Rome Printing and Publishing Company, Rome, Ga., has been incorporated for the purpose of conducting a printing and publishing business. The incorporators are: J. A. Hall, F. H. Wright and B. E. Brown. Capital stock, $3,000, with privilege of increasing to $25,000.

Failures.

The Pacific Labeling Company, San Francisco, Cal., has been advertised to be sold out at sheriff's sale.

The California Publishing Company, San Francisco, Cal., has been advertised to be sold out at sheriff's sale.

The J. A. Dorsey Printing Company, Dallas, Tex., which failed some time ago, has paid a final dividend of 4½ per cent.

The J. K. Gill Company, stationer, Portland, Ore., which recently failed, shows assets of $182,402.75, and liabilities $130,176.63.

T. K. Muller & Co., dealers in wall papers, &c., 904 Madison avenue, Baltimore, Md., made an assignment for the benefit of their creditors on June 22 to John Spring, Jr., trustee. The liabilities are estimated at about $3,000.

Frank C. Braden, stationer, Portland, Ore., who has assigned to R. L. Edwards, makes a statement showing assets of $3,500 and liabilities of $5,173.61. Among the creditors are Thomas Crowell & Co., $260; Boorum & Pease Company, $694; San Francisco News Company, $104; Bank British Columbia, $225; Cordelia Braden, $1,000; Commercial National Bank, $234; J. K. Gill Company, $1,550; Jacob Kamm, $250. Cordelia Braden is secured by chattel mortgage on the stock.

Jennie Hoey, stationer, Portland, Ore., has assigned to S. L. M. Gilman. She shows assets of $12,787, consisting of stock, $6,287; furniture and fixtures, $750, and equity in real estate, $5,750. The liabilities are $5,950.39, and among the creditors are J. K. Gill Company, $321; Peter McGrath, $200; Commercial National Bank, $600; Cunningham, Curtiss & Welch, $263; Eckerman & Will, $197; Rose Feigenbaum, $1,090; H. J. Hoey (son of assignor), $516; Eugene Hoey (son of assignor), $444; S. L. M. Gilman, assignee, $1,100, secured by mortgage; C. E. Pendall, $900, secured by mortgage.

The sheriff on Thursday took charge of the office furniture and stock of the International Yacht Publishing Company, at 155 Broadway, New York, under three executions amounting to $6,100, in favor of H. A. Chittenden, Jr. The company was organized in 1892, with a capital stock of $10,000, which was afterward increased to $25,000. W. G. Taylor is the president, W. P. Thorp secretary and treasurer, and Henry A. Mott, D. D., is editor. The company published on subscription a large and expensive book called "The Yachts and Yachtsmen of America." The first volume was issued last May, after two years' preparation, and an expenditure, as is claimed, of over $50,000. Mr. Taylor said that after the book had been sent out all over the country it was found that it was defective, a mistake having been made by the binders. Owing to this fact and to the depression in business, it was found impossible to make collections. Mr. Chittenden had loaned the company money and judgment was entered against it in his favor. Mr. Taylor says that he confidently expects to have everything straightened out by the first of next week, and to issue his second volume this fall.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, FRIDAY, July 6, 1894.

THE MONEY MARKET.—There was a fair volume of business in the stock market, and most of the moving shares closed at lower figures. The loan market was without change for call contracts, which were made at the Stock Exchange at 1 per cent. Time loans were offered freely. Quotations were 1@1½ per cent. for thirty to sixty days, 2 per cent. for ninety days, 2½ per cent. for four and five months and 3 per cent. for most longer dates. Commercial paper was in poor supply. Rates closed at 2½@2¼ per cent. for best indorsed receivables; prime sixty and ninety day indorsed bills, 3 per cent.; four month commission house names, 3@3½ per cent.; prime single names, 3½@4 per cent., and good single names, 4½@6 per cent. The offerings of paper of the second grade continued heavier than those of the most approved makers. The market for foreign exchange was slightly firmer, as the freight blockade in Chicago due to the strike has the effect of holding some bills out of the market. Francs were easy owing to a partial recovery of sterling in Paris, which reduces the profit from gold exports. Posted rates were $4.88 for sixty days and $4.89½ for sight. Actual rates were $4.87@4.87½ for sixty days and 4.88@4.89 for sight.

THE PAPER TRADE.—There is little that is new in the paper market. Some fair orders for Book paper have been placed, one of them being for several hundred tons of machine finished soda fibre paper for a patent medicine publication. The price has not been reported. Fruit growers are showing some interest in the tissue market, and a New York house has been placing some orders for fruit wrappers, one of ten cars going to a Western mill. None of the other grades show any special features. Product is much restricted, and this week has been the annual shut down, stock taking and general clean up with many mills.

JUTE BUTTS.—The market for Jute Butts is quiet and unchanged. The statistical position as given by Cabot, Ray & Co. is as follows: Imported to the United States, 1891, 560,692 bs.; 1892, 232,387 bs.; 1893, 331,738 bs. Consumed in the United States in 1891, 567,972 bs.; 1892, 222,609 bs.; 1893, 868,336 bs. Stock on hand, New York and Boston, January 1, 1894, 6,150 bs. Imported, New York and Boston, since January 1, 1894, 132,259 bs.; 1893, 301,547 bs.; 1892, 194,601 bs. Stock, New York and Boston July 1, 1894, 2,900 bs.; 1893, 20,065 bs.; 1892, 93,328 bs. On passage for the United States June 21, 1894, 72,769 bs. and by cable to June 30, 1894, none; 1893, 38,501 bs.; 1892, 7,908 bs. Visible supply to November 1, 75,669 bs.; 1893, 58,566 bs.; 1892, 101,236 bs. Consumption since January 1, 1894, 135,509 bs.; 1893, 324,230 bs.; 1892, 134,243 bs. Delivered to consumers past 30 days, 25,753 bs.; 1893, 21,980 bs.; 1892, 9,811 bs. The same circular adds: "Market for the month has been without feature, sales light on spot and nothing in futures. Calcutta market offering (in small lots at 1 3-16c.) merchantable quality for shipment. Deliveries to consumers for the month have been—To bagging manufacturers, 25,353 bs.; to paper manufacturers, 400 bs. Spot stock, 2,900 bs. paper quality. Supply to November 1, paper quality, 5,900 bs.; owned by bagging manufacturers, 69,769 bs."

WOOD PULP—Ground wood is very quiet, and, with the foreign market demoralized, there are no exports being made.

WOOD FIBRE.—There is a very moderate business in progress. Domestic Soda is quoted at 2¾@3¼c. for Bleached. Domestic Sulphite is quoted at 2@2½c., as to quality, for Unbleached, and 3½c. for Bleached. Foreign grades are quoted as follows: Unbleached Pine, soda process, 2.60@2.75c.; Bleached, same process, 3½@3.90c.; Unbleached, sulphite process, 2.50@3.25c.; Bleached, do., 4@4½c.; Bleached Straw Pulp, 4@4½c. Imports of Chemical Fibre this week aggregated 100 tons, being 88 tons from Copenhagen and 12 tons from Hamburg.

FOREIGN RAGS AND PAPER STOCK.—The market is quiet and transactions are small. We note sale 75 tons SPFF's at 3½c., and 75 tons SPF's at 2½c. Imports for the week aggregated 2,348 bales and 100 tons, being 449 bs. rags, 66 bs. papers, 100 tons chemical fibre and 1,833 bs. manillas. Ports of shipment and quantities are as follows: Antwerp, 618 bs. manillas; Bremen, 6 bs. manillas; Copenhagen, 88 tons chemical fibre; Glasgow, 67 bs. rags, 56 bs. manillas; Hamburg, 12 tons chemical fibre; Liverpool, 190 bs. rags, 783 bs. manillas; London, 5 bs. rags, 66 bs. papers, 48 bs. manillas; Rotterdam, 187 bs. rags; Stettin, 322 bs. manillas.

DOMESTIC RAGS.—There is some movement, but it is not of an important character. No. 1 Whites are quoted at 3¼@3.30c. delivered, Soiled Whites at 2.20c., Ordinary 2's, 75@90c., and extra quality Thirds and Blues, 1½@1¼c.

BAGGING, &c.—The demand for Gunny is very light at present and the quotation remains as before at 1.02½c. Manilla imports for the week aggregated 1,883 bales, being 618 bs. from Antwerp, 6 bs. from Bremen, 56 bs. from Glasgow, 783 bs. from Liverpool, 48 bs. from London and 322 bs. from Stettin.

OLD PAPERS.—There is a moderate trade in old papers. We quote: No. 1 Hard White Shavings, 2¼c.; No. 1 Soft White do., strictly free from wood, 2.15c.; Soft White do., ordinary, 1⅞@3c.; Old Ledgers, 2.10c.; Solid Printed Books, 1¼c.; Mixed Shavings, No. 1, 1.20@1.25c.; Mixed Shavings, No. 2, ¼@1c.; Extra No. 1 Manillas, 1.15c.; No. 1 Manillas, ordinary, .80c.; No. 2 Manillas, .60c.; Light Book Stock, 1½c.; Folded News, .40c.; Mixed Papers, .40c.; Commons, .25@.30c.; Straw Clippings, .45@.50c.; Binders' do., .50c.

STRAW.—Straw is in moderate supply and quite firm. We quote: No. 1 Long Rye at 65c.; No. 2 Long Rye at 50@60c.; Short Rye at 45@55c.; Wheat at 40@50c.; Oat at 50@60c.

ROSINS.—Rosins are dull but steady. We quote: Common to Good Strained, $1.60@1.65; E, $1.80; F, $1.95@2; G, $2.10@2.15; H, $2.40@2.45; I, $2.65@2.70; K, $3; M, $3.15@3.20; N, $3.35@3.40; W G, $3.50.

CHEMICALS.—The market for paper makers' chemicals is dull. Late Liverpool advices are: "The chemical trade continues dull, while prices are nominally without change. Soda Ash is dull and for Leblanc makes the nominal spot range is about as follows: Caustic Ash, 48 per cent., £3.15s.@4; 57 to 58 per cent., £4 10s.@4 15s. per ton; Carb. Ash, 48 per cent., £3 3s.@3 15s.; 58 per cent., £3 10s.@3 15s., all net cash. Ammonia Soda, 58 per cent., is not active, but there is a fair business passing, and quotations range from £3 10s.@3 15s. per ton, net cash, for tierces and 5s. less for bags. Soda Crystals flat at £2 12s. 6d.@2 15s. per ton, less 5 per cent. Caustic Soda is difficult to sell and makers anxious for orders. Quotations vary according to export market, and the nominal spot range is about as follows: 60 per cent., £7 10s.@8 5s. per ton; 70 per cent., £8 10s.@9 5s. per ton; 74 per cent., £9 10s.@10 5s. per ton; 76 per cent., £10 10s.@11 5s. per ton—all net cash. For parcels under 10 tons 5s. per ton extra is charged. Bleaching Powder is less inquired for, but no change has been made in quotations, which remain at £7 10s.@8 5s. per ton, net cash, for hardwood packages according to market." In Bleaching Powder fresh hardwood packages rule at 2¼c., but others are lower, ranging at 2@2.10c. Caustic Soda is firm, but the market is not active. The reports of restricted output of Alkali keeps the market steady here, and Sal Soda is having its usual demand for this season. During the week there have been sales of 100 cks. Bleach at 2@2¼c.; 50 tons Soda Ash at 1⅜c.; 100 tons 58 per cent. Alkali at 1@1.20c.; 150 drums Caustic at 2.70@2.82½c.; 10 cs. German Ultramarine at 17¼c.

CHINA CLAY.—The China Clay market is almost without any sales whatever, and activity is not expected to revive until the opening of a new season. For small lots we quote $17.50, while medium grades may be had in bulk lots as low as $12.

TWINES.—There is a moderate volume of business. We quote: Sisal Hay Rope, 5@6c.; Sisal Lath Yarn, fine, 9¼c., and medium, 9c.; Jute Lines, 7½c.; Jute Ready, 7@7½c.; New Zealand Hay Rope, 6¼@7¼c.; New Zealand Lath Yarn, fine, 9¼c.; medium, 8¾c. Twines—Hemp, 4½ and 6 B Russia, 12c.; 4½ and 6 A American, 12c.; 4½ and 6 D Jute, 9½c.; 4½ and 6 L Jute, 9c.; Hemp Ball, 18 B C, 17c.; 18 C, 15c.; Russian Hemp Hay Rope, 9c.

COAL.—The position of Anthracite is unchanged from last week. At a meeting of sales agents a few days ago it was agreed that production should be restricted to about 60 per cent. of the capacity, and that there should be an advance. The circular prices of free burning coal f. o. b. New York are as follows: Broken, $3.75; Egg, $3.75; Stove, $4.15, and Chestnut, $4.15. Soft coal is now being more generally produced than at any time within the past ten weeks. The men in Maryland have resumed operations at the old rate of wages, while those in Central Pennsylvania have also been beaten by the operators, the mines being governed by the same conditions and rules that existed before the strike, and in the Broad Top district men have resumed, so that we shall now have a large tonnage from these points, in addition to the coal coming from the more southern points of shipment to supply the seaboard soft coal consumers.

EDWIN BUTTERWORTH & CO.,
MANCHESTER ENGLAND,
PACKERS OF ALL KINDS OF
Paper Stock, Cotton Waste and Buffalo Sizing, Wood Pulp, Moist and Air Dry Pulp, Soda and Ground Pulp,
83 GUNNY BAGGING, &c.
OFFICE IN NEW YORK:
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WATERBURY
Felts and Jackets,
MANUFACTURED BY
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ORISKANY, N. Y.
Adapted to every grade of paper, from the finest to the coarsest.
The Largest Manufacturers of Paper Makers' Felts in the World.
Our wet machine or pulp felts are unequaled for durability.
For WRITING and LEDGER PAPERS
We warrant a felt equal to anything imported.

PRICES CURRENT.

NEW YORK MARKET.

Paper Market.
DEALERS' SELLING PRICES.

Ledger and Record	$0.18	@	$0.24
Flat Caps, superfines	14	@	16
Flat Caps, fines	11½	@	13
Flat Caps, engine sized	7½	@	9
Blotting, American	8	@	15
Blotting, English	17	@	....
Book, super sized and calendered	6	@	9
Book, super sized and tinted	6	@	7½
Book, extra machine finish	5½	@	6
Book, machine finish, low grade	5	@	5½
News, No. 1	4	@	4½
News, rag and wood	3	@	3½
Poster	5	@	7
Hanging, superfine, No. 1	8	@	10
Hanging, superfine, No. 2	6	@	8
Hanging, machine satin	4	@	4½
Hanging, white blank, No. 1	4	@	4½
Hanging, curtain	3½	@	4
Hanging, brown	2½	@	3
Colored papers, double mediums	6½	@	8
Colored papers, glazed medium	7½	@	8½
Colored papers, tobacco	8½	@	9½
Colored papers, tissues, 20×30, ℔ ream	1.10	@	1.25
Tissues, black, 20×30, ℔ ream	1.40	@	1.50
White tissue, 20×30, ℔ ream	85	@	1.00
White tissue, 24×36, ℔ ream	1.30	@	1.50
Manillas, Flour sack, cream	10½	@	....
Manillas, Flour sack, drab	9½	@	11
Manillas, Rope, unbleached No. 1	9½	@	11
Manillas, Rope, unbleached No. 2	7½	@	9
Manillas, No. 1, light weight	6½	@	6¾
Manillas, No. 1, heavy weight	6¾	@	6½
Manillas, No. 2	5	@	6
Manillas, Bogus	2¾	@	3½
Wrapping Parchment	16	@	....
Tissue Manillas, full count, weight and size, 24×36, other sizes in proportion	75	@	80
Hardware, light colored, No. 1	9	@	10
Hardware, No. 1, glazed, tarred	7	@	8
Hardware, No. 1, glazed	4½	@	5
Binders' Boards, ℔ ton, No. 1	70.00	@	90.00
Binders' Boards, ℔ ton, No. 2	40.00	@	50.00
Strawboards, air dried, No. 1, ℔ ton	47.50	@	....
Strawboards, steam dried, No. 1, ℔ ton f. o. b. mill	....	@	34.00
Straw Wrapping, basis, 15×20, 15½ lbs., 20 sheets—			
36×40, from 28 to 42 lbs. ℔ rm	85	@	....
30×40, from 20 to 34 lbs. ℔ rm	....	@	72
24×36, from 24 to 26 lbs. ℔ rm	....	@	60
22×32, from 24 to 26 lbs. ℔ rm	56	@	....
20×30, 21 lbs., ℔ rm	....	@	44
20×30, from 14 to 17 lbs. ℔ rm	36	@	....
16×22, from 12 to 13 lbs. ℔ rm	28	@	....
18×28	....	@	32
15×20, 10 lbs. ℔ rm	17	@	19
15×20, from 7 to 8½ lbs. ℔ rm	17	@	19
14×18	....	@	15
12×16	....	@	13
11×15	....	@	11
Straw Wrapping, ℔ lb., heavy weight	1.75	@	1.85
Straw Wrapping, ℔ lb., light weight	1¾	@	....
Cigarette, Straw Tissue, per case of 100 boxes, 50 books to the box, 200 sheets to the book	21.00	@	30.00
Tea Papers, 16 sheet quires—			
12×18	18	@	20
14×20	22	@	....
Card Middles, ground wood	5¾	@	6¼
Card Middles, long fibre wood	8¾	@	9
Card Middles, rag and wood	6	@	9
Pulp Lined Boards, single manilla, No. 100 and heavier	42.50	@	....
Pulp Lined Boards, double manilla, No. 100 and heavier	47.50	@	....

Woolen Rags.

Comforter Stock	8	@	9
White Woolens	9	@	10
Blue Gray Stockings	7	@	8
White Stockings	15	@	16
Blue Flannels	6	@	7
Reds, old	7½	@	8
Reds, new Shirt Clippings	20	@	21
Mixed Softs, free of Carpets	7½	@	8
Seamed Cloth	3½	@	4
Skirted Cloth	2½	@	2
New Cloth Clips	9	@	11
New Satinets, clean stock	1¾	@	1½
Satinets, old	65	@	75
Seams	1	@	1¼
Delaines, stripped for extract	2½	@	3½
Blankets, Woolen	2½	@	2¾
Wool Carpets	3	@	....
White Linseys	3	@	3¼
Mixed Linseys	1½	@	....

Rags, Rope and Bagging.

White Shirt Cuttings, No. 1	5½	@	6
Mill Assorted Whites	3½	@	3¾
Unbleached Muslins	4	@	4¼
City Whites, No. 1	3¾	@	....
New Seconds, light	2¼	@	....
New Seconds, dark	1¾	@	2
No. 2 Whites	¾	@	1.15
Cotton Canvas, No. 1	3½	@	....
Linen Canvas, No. 1	....	@	3
Country Mixed, free of Woolens	60	@	75
Seconds (City)	30	@	50
Colors, ℔ 100 lbs	30	@	40
Manilla Rope	2	@	2¼
Manilla Rope, tarred	....	@	....
Gunny Bagging, No. 1	....	@	1¼
Mixed Bagging, No. 1	80	@	90
Burlap Bagging, No. 1	....	@	1¼
Kentucky Hemp Bagging	....	@	....
Tar Shakings	1	@	....
Hemp Twine Stock	2½	@	....
Jute Waste	½	@	1

English Old Papers and Shavings.

Hard Shavings, No. 1	2	@	....
Soft Shavings, No. 1	2¼	@	2½
White and Colored Shavings, No. 1	1¾	@	1¾
White and Colored Shavings, No. 2	1	@	1¼
Cream Post Shavings	2¼	@	....
Paper Collar Cuttings	....	@	2
Briefs and Letters	1⅝	@	1¾
Books and Pamphlets	1.10	@	....
Old Newspapers	....	@	....
Broken News and Letters	⅞	@	1
Old Blank Books	2¼	@	2⅜
White and Buff Railway Sheets	1¼	@	....

Chemicals, Coloring Materials, &c.

Alkali, 58 ℔ cent	1	@	1.20
Alum, lump	1.65	@	....
Alum, ground	1.75	@	....
Alum, Keystone	1⅛	@	1¼
Alum, Diamond	....	@	2½
Alum, pearl	2¾	@	2¾
Alum, porous	2¾	@	3½
Alum, Merrimac porous	2	@	....
Aluminous Cake	....	@	1¼
Anti-Chlorine	....	@	2¼
Bichromate Potash, American	....	@	10
Bleaching Powders, spot	2	@	2½
Cambridge Ochre	11.25	@	....
Caustic Soda, 60 ℔ cent	2.70	@	2.82½
Clay, China, English, ℔ ton	12.50	@	17.00
Clay, China, "Star"	12.50	@	....
Clay, China, "Keystone"	10.75	@	....
Clay, South Carolina, ℔ ton	9.50	@	10.00
Clay, Terra Alba, French, ℔ cwt	1.00	@	1.12½
Clay, Terra Alba, American, No. 1	95	@	1.00
Corn Starch	3	@	3¼
Copperas, American	....	@	80
Extract Logwood	9½	@	....
Mineral Pulp	10.25	@	....
Orange Mineral	....	@	9½
Potato Starch	4½	@	4¾
Prussian Blue, dry	30	@	35
Prussiate Potash, American	....	@	34½
Rosins, common to good strained, ℔ bbl	1.60	@	1.65
Rosins, E, ℔ bbl	....	@	1.80
Rosins, F, ℔ bbl	1.95	@	2.00
Rosins, G, ℔ bbl	2.10	@	2.15
Rosins, H, ℔ bbl	2.40	@	2.45
Rosins, I, ℔ bbl	2.65	@	2.70
Rosins, K, ℔ bbl	3.00	@	....
Rosins, M, ℔ bbl	3.15	@	3.20
Rosins, N, ℔ bbl	3.35	@	3.40
Rosins, W G, ℔ bbl	....	@	3.50
Sal Soda	1.10	@	....
Soda Ash Caustic, 48 ℔ cent	1.60	@	1.65
Soda Ash, carbonated, 48 ℔ cent	1.57½	@	1.70
Soluble Blue	40	@	55
Spanish Brown	½	@	1
Sugar Lead, white	12	@	....
Sugar Lead, brown	7	@	....
Sulphate of Alumina	....	@	2½
Sulphuric Acid, 66 ℔ cent	1	@	1¾
Ultramarine, blue	14	@	17½
Venetian Red	1	@	1½
Vitriol, blue	5½	@	5¾
Yellow Ochre Rochelle	1.35	@	1.50

BOSTON MARKET.

Paper Stock.

White Rags, No. 1	3½	@	3¾
No. 2 Whites	2	@	....
Common Seconds	2	@	2¼
Thirds and Blues	1	@	1.20
Southern Mixed Rags	80	@	1
Colors, country	½	@	¾
Colors, city	25	@	30
New Calicoes, light	2	@	2½
New Calicoes, dark	1¼	@	1¾
Shirt Cuttings, best	4¾	@	5
Shirt Cuttings, good	4	@	4¼
Shirt Cuttings, unbleached	4	@	4¼
Shirt Cuttings, unbleached No. 2	....	@	3
Shirt Cuttings, cheviots	3	@	3¼
Overall Cuttings, blue	....	@	3
Overall Cuttings, brown	2	@	2½
Shoe Rags, bleached	3¾	@	4
Shoe Rags, unbleached	3½	@	3¾
Shoe Rags, brown	3	@	3¼
Cotton Flannels, bleached	3½	@	4
Cotton Flannels, unbleached	3½	@	3¾
Corset Rags, drab	3½	@	3¾
Corset Rags, white	4	@	....
Tailors' Seconds	1¾	@	....
Tailors' Colors	25	@	35
Cotton Canvas	3	@	3¼
Cotton Canvas, No. 2	....	@	1¾
Linen Canvas	1½	@	2
New Canvas Cutting	4	@	4¾
Insole Canvas	2	@	2½
Print Papers, best	30	@	35
Print Papers, ordinary	25	@	....
Folded News	25	@	30
Old Waste Papers	20	@	25
Manilla Paper, No. 1	1.30	@	1.35
Manilla Paper, good mixed	85	@	90
Manilla Paper, blues	65	@	70
Mixed Book Stock	95	@	1
Books and Pamphlets	1.15	@	1¼
Book Stock, light	¾	@	1
Ledgers and Letters	1¾	@	2
Soft Book Shavings	....	@	1¾
Hard White Book Shavings	2¼	@	2¾
Leather Board Chips	75	@	85
Straw Chips	45	@	50
Shivey Bagging	1½	@	....
No. 1 Factory Bagging	1	@	....
Burlap Bagging	1.00	@	1.05
Burlap Bagging, large pieces	85	@	1¼
Kentucky Bagging	1½	@	2
Mixed Bagging	⅝	@	....
No. 2 Bagging	½	@	⅝
Shakings, soft	½	@	....
Tarred Shakings	1	@	1¼
Standing Rigging	2½	@	2¾
Standing Rigging, foreign	2¾	@	3.15
Bolt Rope	2	@	2.15
Oakum Junk, No. 2	1½	@	1¾
Tarred Paper Junk	1.15	@	1.20
Tarred Paper Junk, inferior	⅞	@	....
Manilla Rope	2	@	2.10
Tarred Manilla	1½	@	....
Hemp Strings	1⅞	@	2
Sisal Strings	80	@	1
Wool Strings	90	@	1.10
Flax Tow	¾	@	1
Flax Waste	¾	@	1

New Papers.

Superfine Book	6	@	7
Fine Book	5½	@	6
News, rag and wood	3	@	....
Manilla, Cream Rope	9½	@	10
Manilla, No. 1, Rope	7½	@	8½
Manilla, Extra Jute	5½	@	6
Manilla, Jute and Gunny	5½	@	6
Manilla, No. 2	4	@	4½
Manilla, Bogus	2	@	3
Hardware, No. 1, tarred	7½	@	8¼
Hardware, No. 2	6½	@	7
Hardware, red	4½	@	5¼
Strawboards, air dried, ℔ ton	37½	@	45.00
Strawboards, steam dried, ℔ ton	30.00	@	35.00
Straw Wrapping, heavy	1.90	@	2¼
Straw Wrapping, light	2¼	@	2½
Binders' Boards, ℔ ton	45.00	@	50.00
Leather Board, Common, ℔ lb	3	@	4
Leather Board, counter	5	@	8
Leather Board, extra	8	@	10
Tar Boards, ℔ ton	100.00	@	110.00

Chemicals.

Alkali	1.00	@	1.10
Aluminous Cake, currency	1¼	@	1½
Alum, American ground	....	@	1.95
Alum, American lump	....	@	1.85
Anti-Chlorine	2	@	2¼
Bichromate Potash	9	@	9½
Bleaching Powders	1¾	@	2¼
Blackley Blue	2.00	@	3.00
Caustic Soda, 74 ℔ cent	....	@	2.65
Clay, English, ℔ ton	14.00	@	18.00
Clay, American, ℔ ton	10.00	@	11.00
Copperas, ℔ lb	65	@	75
Extract Logwood	5½	@	11½
Lime, Rockland, ℔ bbl	85	@	90
Prussian Blue, ℔ lb	32	@	35
Prussiate Potash, yellow	23	@	24
Prussiate Potash, red	33	@	36½
Rosin, common strained, ℔ bbl	1.90	@	2.50
Rosin, Medium	2.20	@	3.00
Rosin, extra pale, ℔ bbl	3.00	@	4.50
Sal Soda, ℔ lb	85	@	....
Soda Ash, 48 ℔ cent. caustic	1.40	@	1.60
Soda Ash, 48 ℔ cent. carbonated	1.37	@	1.50
Soluble Blue	55	@	65
Sugar Lead, white	11	@	12
Sugar Lead, brown	5½	@	6
Sulphuric Acid, 60°	¾	@	1¼
Terra Alba, ℔ ton	9.00	@	15.00
Ultramarine, ℔ lb	7	@	25
Venetian Red, ℔ lb	¾	@	1¼
Vitriol, Blue	....	@	3½
Yellow Ochre	½	@	1

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Twenty-five words or less, one dollar each insertion. Over twenty-five words, four cents a word each insertion, up to eighty words. Cash should accompany order.

Over eighty words, or displayed advertising, will be charged for by the inch, according to our regular schedule of rates.

Answers can come in our care and will be promptly forwarded without extra charge.

WANTED—BY FIRST-CLASS, SOBER MAN, situation as cylinder machine tender; close runner on weights of flour sack and all papers; state wages. MANILLA, care Journal.

WANTED—GOOD SITUATION BY COMpetent machine tender; references. Address A. BLETZINGER, North Western Hotel, Chambers street, New York.

WANTED—SITUATION AS FOREMAN IN book, news or manilla mill; long experience on jute, sulphite and all grades of manilla stock. Address MANILLA, care Journal.

WANTED—ONE SECOND-HAND IRON TUB beater, 36x36 inch roll. Address with full particulars H. O. MOORHOUSE, Bridesburg, Philadelphia, Pa.

TO RENT—A FRONT ROOM, CONTAINING about 550 square feet of floor space, first loft, in building occupied by The Lockwood Press, on the southwest corner of Duane and Church Streets. Apply to HOWARD LOCKWOOD & CO., on the premises.

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FOR SALE—A TISSUE MILL AND A MANILLA mill on favorable terms. I. S. DILLINGHAM, 67 Federal street, Boston Mass.

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One 77 inch Fourdrinier Machine, Rice, Barton & Fales' make, 16 inch coucher, gun metal press rolls and rubber size roll. The machine is in perfect order and can be seen running any time during the next six weeks at our mill; our only reason for selling is that we intend to put in a larger machine.

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Fourdrinier Machine. New and Modern; wire, 92 inches wide, 45 feet long; forty 2½ inch table rolls, three brass suction boxes; gun metal and rubber press rolls; thirteen dryers, 48×88; nine stack calenders, reels, cutter; Manning winder; cone pulley driving train.

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Four 1,000 pound Umpherston Beating Engines, complete, with patent copper washers, sand traps, &c. Engines in first-class condition and now running, but to be taken out to make room for other machinery. Address UMPHERSTON,
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The Hanmer & Forbes Company's Manilla Mill.

BURNSIDE, Conn., April 10, 1894. C. F. HANMER, Secretary.

NOTICE.

My attention having been called to the fact that certain parties are infringing certain Letters Patent granted to me, to wit: No. 212,866, dated March 4, 1879, covering a new form of carpet lining, and No. 295,698, dated December 31, 1880, covering the method of and apparatus for making the same, this is to notify all such persons, whether manufacturers or dealers, that any infringement of either of said patents will be prosecuted to the full extent of the law. MOSES NEWTON, Patentee.

PAPER MILL MACHINERY.

One 84 inch Fourdrinier part to paper machine complete, with Gould screen.

One 74 inch Fourdrinier machine complete, Gould screen; gun metal press rolls, 15x75 inches; eight iron dryers, 36x72 inches; stack of nine chilled rolls, 72 inch face; upright reel and cone pulley cutter; Bess slitters.

One Gould screen, eight plates, 10x36 inches.

One Gould screen, eight plates, 12x40 inches.

One Barber's suction.

One 70 inch machine complete, Gould screen, Fourdrinier wire, 70x33 inches; first and second presses; eight iron dryers, 36x65¾ inches; stack five chilled rolls, four 12 inches, one 16x64 inches face; upright reel, slitter and winder.

Two new 1,000 pound Holyoke Machine Co. beaters, wood tubs.

One 1,000 pound iron tub beater.

Six beating engines, 36 inch roll, iron tubs.

One 1,200 pound Horne patent engine, new.

One rotary, 7x30, double riveted, 9-16 inch shell.

Three Scott & Roberts hydraulic pulp grinders.

Three Jordan engines.

Two rag cutters and duster.

Four iron dryers, 28x72 inches.

Send for catalogue of machinery, steam engines and boilers.

1,000 feet shafting, 2 to 6 inches diameter; 500 feet belting, 5 to 48 inches wide.

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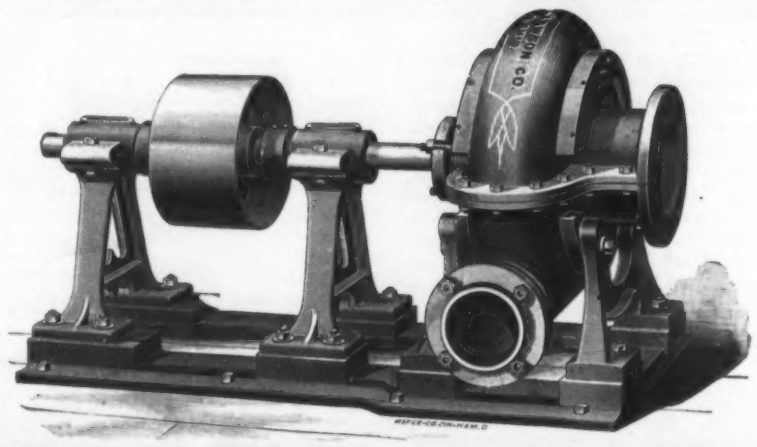

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Manufacturers of **Straw Boards, Pulp Lined Boards, Lined Straw Boards, Combination Boards, Binders' Boards,**

"LIGNISTRA." Friction Boards, Building Board, Plain Board, Tarred Board, Waterproof Boards, Barrel Layers, Peach Baskets, Egg Cases and Fillers.

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WET MACHINES,

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Made in three sizes: Eight, Nine and Ten Plates.

☞ SEND FOR BLUE PRINTS.

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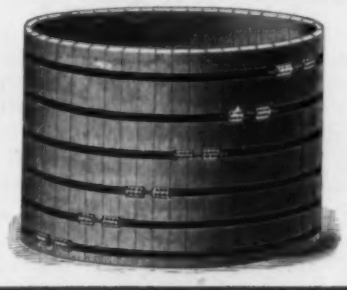

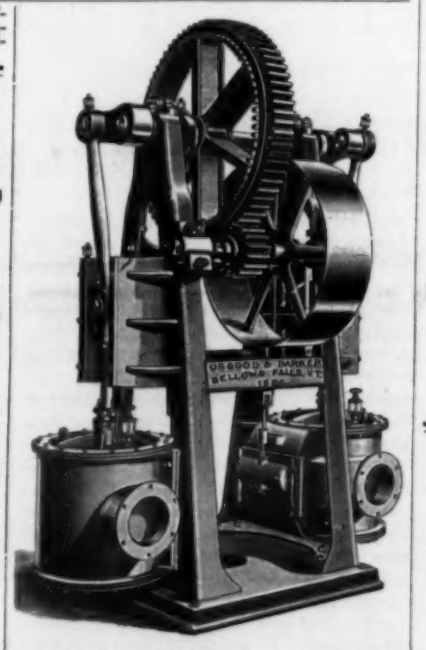

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With one, two, three or four stacks of dryers.

Upright Reels, with two or three Drums,
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For buffing ends of the rolls.

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For all kinds of Paper.

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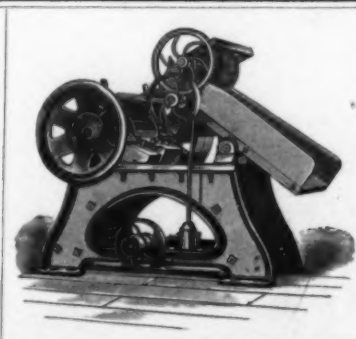

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Cylinder Paper Machines, Rag Engines, Paper Cutters, Super and Machine and Chilled Iron and Paper Roll Calenders, Stuff and Fan Pumps, Shafting, Pulleys, Gearing and Paper Mill Machinery generally.

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RAG CUTTER,

TO CUT ROPE, JUTE BUTTS, BAGGING, OR ROOFING PAPER STOCK?

IF SO, WRITE TO

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The only Mill west of Ohio.

We have demonstrated our ability to compete in

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and solicit a trial order, especially for writing and book papers.

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NO TAR. **ROOFING** NO TAR.

It is superior to any other Roofing and unequaled for House, Barn, Factory or Outbuildings; it costs half the price of shingles, tin or iron; it is ready for use and easily applied by anyone; it is the best roofing in the market in durability. Send for estimate and state size of roof.

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The best known Paint in the world for Tin, Iron or Shingle Roofs, Fences, sides of Barns and Outbuildings; it costs only **60 cents** per gallon in barrel lots, or **$4.50** for a 5-gallon tub. Color, dark red. It will stop leaks in tin or iron roofs that will last for years; it is guaranteed not to peel, crack, scale nor wash off and it's fireproof against sparks. TRY IT.

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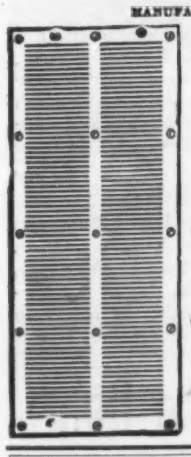

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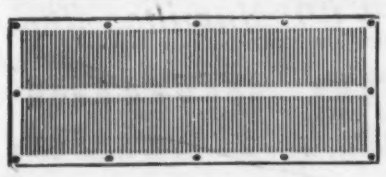

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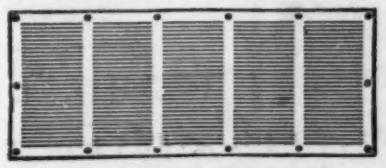

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A NEW PRINCIPLE APPLIED IN TESTING PAPER.

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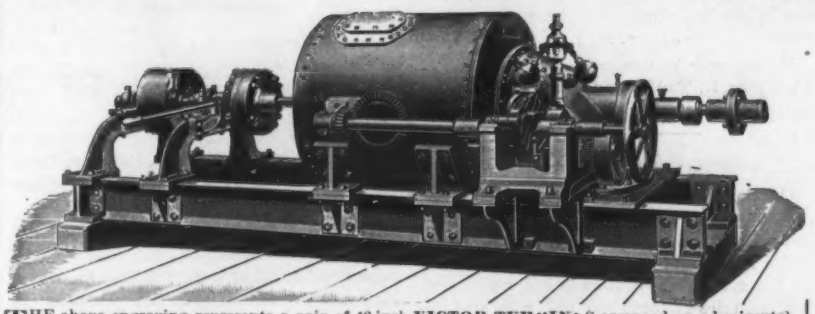
UPRIGHT or HORIZONTAL.

In use in a large number of best Paper and Pulp Mills in this and other Countries.



THE above engraving represents a pair of 12 inch VICTOR TURBINES arranged on a horizontal shaft, with Cast Iron Flume, Draft Tubes, End Bearings for Shaft, and Driving Pulleys complete, all mounted upon a substantial cast iron bed plate. The entire arrangement is very complete and strictly first class in every particular. We are now prepared to furnish Victor Turbines, either single or in pairs, on horizontal shafts, and where the situation admits of their use we recommend them.

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INSURING HIGHEST PERCENTAGE OF USEFUL EFFECT AT

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TESTS IN HOLYOKE FLUME.

SIZE WHEEL.	HEAD IN FEET.	HORSE POWER.	PER CENT. OF USEFUL EFFECT
15 inch	18.06	30.17	.8692
17½ inch	17.96	36.35	.8980
20 inch	18.21	49.00	.8532
25 inch	17.90	68.62	.8584
30 inch	11.65	52.54	.8676
35 inch	17.29	133.19	.8497
40 inch	16.49	148.93	.8253
48 inch	15.51	179.29	.8202

Such results, together with its nicely working gate and simple, strong and durable construction, should favorably commend it to the attention of all discriminating purchasers.

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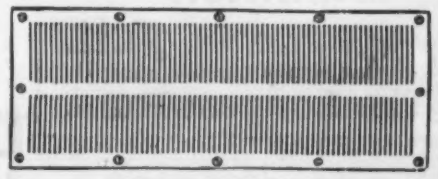

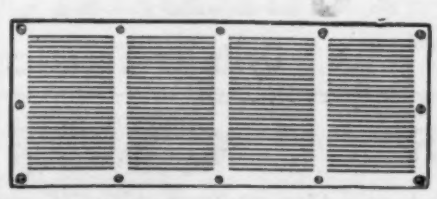

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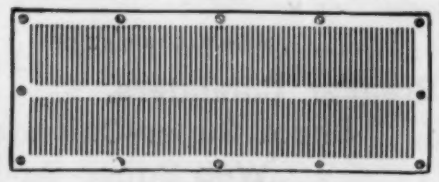

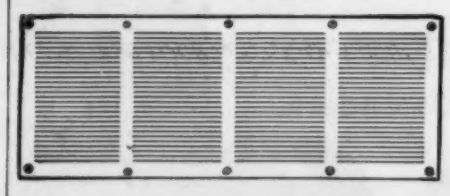

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Are running forty-four (44) of the best paper machines in this country and in Europe, transmitting from 20 to 40 horse power each. Thousands of small Cones, hanging and standing, in operation, driving all kinds of machinery. Send for Catalogue "G."

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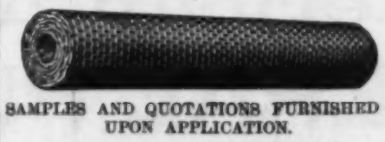

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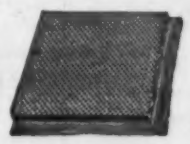

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Asbestos Prepared Roofings.

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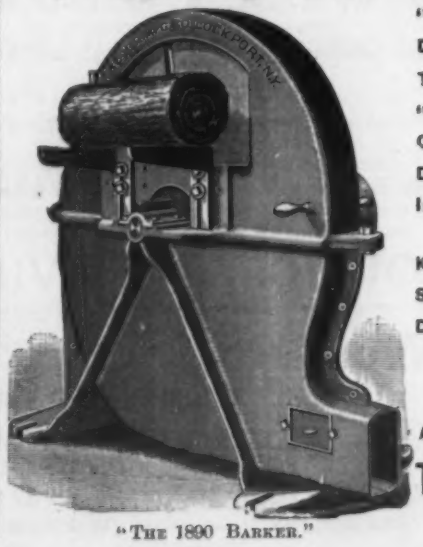

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"Niagara" Grinders,
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"1890" and "Giant" Barkers,
Cross Sawing Machines,
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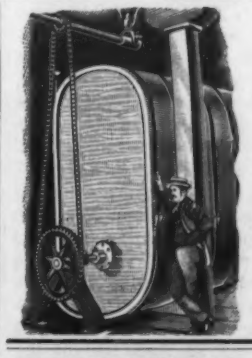

THE SAVAGE PERFECTING STUFF CHEST.

Fits into a narrow space and requires but little power to operate.

It has a double agitating motion, moving the stuff in different directions, which prevents "floating."

It empties itself clean; no waste of stuff and protects from dirt.

Quantity of stuff in chest always shown by indicator.

In writing give space in height, length and breadth if pressed for room; also the amount of stock in dry paper that the chest is wanted to hold.

PATENTED AND MANUFACTURED BY

E. L. SAVAGE, Mechanic Falls, Me.

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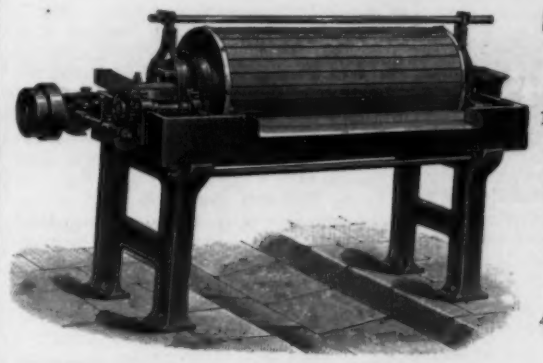
MACHINISTS AND IRON FOUNDERS.

SPECIALTIES:

Improved Paper-Coating Machines; Hanging Machines and Power Reels for Coated Paper; the Merrill-Foster Noiseless Pulp Screens; Paper Slitting and Trimming Machines; Hardened and Ground Slitters; Automatic Elevators.

BUILT UNDER OUR OWN SUPERVISION.

THE "WANDEL" Patent Rotary STRAINER



Is the best Screen on the market, and is now used in

148 Paper Mills in Germany.
25 Paper Mills in Austria.
85 Paper Mills in France.
12 Paper Mills in Switzerland.
31 Paper Mills in Italy.
16 Paper Mills in Spain.
26 Paper Mills in England.
9 Paper Mills in Sweden and Norway.
10 Paper Mills in Russia.
And in the Thilmany Pulp and Paper Mills, Kaukauna, Wis.

The "Wandel" Patent Rotary Strainer is delivered ready for use, with or without the bearing frame.

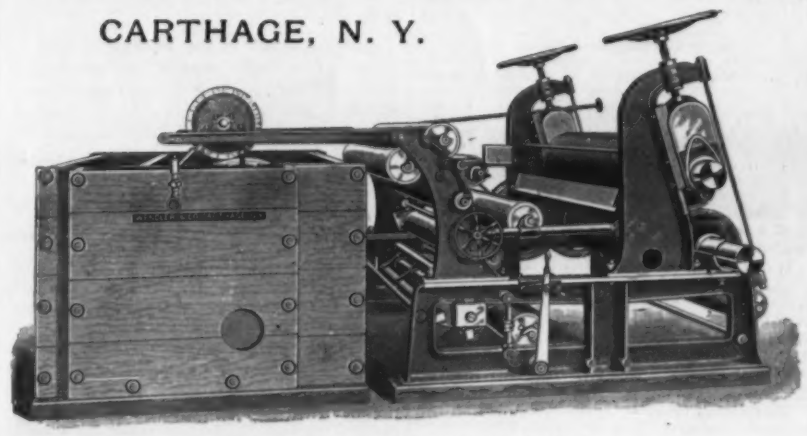
FOR FURTHER PARTICULARS APPLY TO

CHR. WANDEL, Reutlingen, Germany.

Or GEORGE HAMILTON, 74 Wall St., New York.

WENDLER & CO.,

CARTHAGE, N. Y.



STANDARD WET MACHINE.

A Full Line of Centrifugal and Fan Pumps.

ALL MACHINERY AND APPLIANCES USED IN THE MANUFACTURE OF WOOD PULP AND SULPHITE FIBRE.

Manufacturing News.

EASTERN STATES.

During last month the Lawrence Machine Company, Lawrence, Mass., received a number of orders for centrifugal pumping machinery and vertical steam engines, among them the following: Perrin, Seamans & Co., one 4 inch class B pump and 4 inch foot valve; Cheney Brothers, South Manchester, Conn., one 5 inch class A pump; Niagara Falls Paper Company, Niagara Falls, N. Y., one 5 inch class A pump; J. M. Ellis, Woburn, Mass., one 6 inch class B pump, combined with a 10 horse power engine, with foot valve, piping, rubber suction hose, &c.; F. L. Allen, Worcester, Mass., one 6 inch class B pump and 10 horse power Lawrence vertical engine and foot valve; Parkhill Manufacturing Company, Fitchburg, Mass., one 2 inch class B pump and foot valve; Kitson Machine Company, Lowell, Mass., two 1½ inch class C pumps; Friction Pulley and Machine Works, Sandy Hill, N. Y., one No. 6 new, special side suction pump. Besides these the company received orders from the Winnipiseogee Paper Company, Richards Paper Company, Mount Tom Sulphite Pulp Company, Russell Paper Company and White Brothers & Co.

MIDDLE STATES.

A company has been formed at Albany, N. Y., for the transmission of compressed air as a motive power. The concern is known as the Economic Power and Construction Company. The incorporators are George H. Thatcher, William G. Rice and Augustus P. Smith, all of Albany. The capital stock is $50,000, divided into shares of $100 each. Besides the distribution of power from the central station throughout the city, the company will also manufacture all kinds of machinery used in the application of compressed air. As the opinion has been expressed in some quarters that compressed air is the coming rival of electricity and steam as a driving power, the Albany venture will be watched with interest by power users.

The pulp mill at Fort Miller, N. Y., is undergoing repairs.

The Chasm Mill, Chasm Falls, N. Y., is now producing about 20 tons daily of extra No. 1 ground spruce pulp.

WESTERN STATES.

The strawboard mill at Yorktown, Ind., recently started up. It is reported that since then the river from that point to Anderson has been filled with dead fish, which it is alleged have been killed by the waste from the mill.

On Monday last the Anderson Paper Company, Anderson, Ind., started up its mill, which has been shut down for some time.

A suction roll has been invented at Kaukauna, Wis., and is said to be in successful operation on one of the machines at the Little Badger Mill.

SOUTHERN STATES.

Augusta, Ga., is said to have the largest water power of any Southern State. The Augusta Canal and Water Power Works, completed in 1872, cost nearly $2,000,000, and consist of a massive stone dam thrown entirely across the river 7 miles above the city, a canal 7 miles long to the city, and 2 miles of level within the city. From this construction 14,000 horse power is available and by raising the dam 15,000 horse power more can be obtained. Only 10,000 of the horse power has as yet been taken.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; T. D., trust deed, and Real, a mortgage on real estate.]

EASTERN STATES.

Mortgagor.	*Amount.*
C. W. Calkins & Co., Boston, Mass.	$5,000

MIDDLE STATES.

Charles A. Neydorf, Albany, N. Y.	2,000
Rice-Taylor Printing Company, Syracuse, N. Y.	1,000

WESTERN STATES.

E. P. Spangler, Indianapolis, Ind. (B. S.)	673
M. E. Lowther, Centerville, Ia. (Real)	600
Asa Whitten, Grand Junction, Ia.	120
S. L. Hill, Moulton, Ia.	420
Charles Ege, Detroit, Mich.	—
William R. Burkhard, St. Paul, Minn. (Real).	1,700
William R. Burkhard, St. Paul, Minn., (Real).	10,000
W. L. Palmer, Clay Centre, Neb.	1,200
S. H. Smith, Kenesaw, Neb.	700
P. D. Melius, Omaha, Neb.	22,228
E. L. Shafer (Omaha Typewriters' Exchange), Omaha, Neb. (Real)	1,125
Nicholas Fechter (Fechter & Braam), Cincinnati, Ohio (Real)	2,250
W. Boardman, Toledo, Ohio	135

SOUTHERN STATES.

John F. Jordin, Gallatin, Mo.	1,000
A. L. Van Wey, St. Joseph, Mo.	150

LIENS DISCHARGED.

Emil Schmied, Duluth, Minn.	345

Sealed proposals for stationery for the use of the United States Senate will be opened at the office of the Secretary of the Senate, Washington, D. C., on July 19.

Obituary.

ELMER E. USTIC.

Elmer E. Ustic died at Chicago on June 28, after ten days of excruciating suffering resulting from an operation for appendicitis.

Mr. Ustick was a son of John T. Ustick, with Geo. H. Taylor & Co., and at the time of his death was in the employ of Taggart Brothers, Watertown, N. Y. He had been brought up in the paper business, and had occupied responsible positions in houses like those of the J. W. Butler Paper Company, Chicago, and the Graham Paper Company, St. Louis, Mo. Mr. Ustick was held in very high esteem by all of the paper trade in the West, as well as by his customers, and was a competitor whom all respected and admired. His habits were of the very best.

DANIEL BECKLEY.

On Friday, June 29, Daniel Beckley, an old and honored paper maker of Beckleysville, near Baltimore, Md., died at that place. His age was sixty-nine years. He was born in a house at the mill site on October 16, 1825. The names of his parents were George and Elizabeth (Keller) Beckley. At first the elder Beckley was a millwright and contractor for the building of mills, then a woolen manufacturer, and afterward a paper maker, farmer and country storekeeper. He educated his son, Daniel, privately by hiring teachers. The latter was employed under his father until attaining his twenty-sixth year. His brother, Jesse, and he then bought the mill, operating it as partners for two years, when Daniel became full proprietor. He improved the water power and mill equipment, greatly enlarged his store, and materially increased the prosperity of his native village. In the spring of 1880 a serious fire at the mill compelled him to temporarily suspend paper making, but after a few months operations were resumed and actively continued until July, 1889, when the mill was burned to the ground. Mr. Beckley did not rebuild it.

At Zoucksville (now called Trenton), in Baltimore County, Daniel Beckley was married on January 27, 1852, to Mary Ann Zouck. Of their five children, a son and a daughter survive the father. His neighborhood popularity and the esteem in which he was held were evidenced by the number of people at the funeral on Sunday, July 1, aggregating at least 1,200, one-fourth of them having driven 20 to 25 miles to show respect for his memory. He was noted for his generosity and sympathetic kindliness. His son and brother-in-law will continue the general business.

T. A. Ennis, of the R. & T. A. Ennis Stationery Company, St. Louis, Mo., died on June 30 at the residence of his brother-in-law at Cote St. Paul, Canada. He was buried on July 3 in the Cote des Neiges Cemetery.

Fires.

R. R. Wells, publisher, Yates Centre, Kan., has been damaged by fire.

The office of the *Enterprise*, Hudson, Mass., was burned out on July 4.

William Grace, dealer in paper hangings, Bristol, Pa., has been burned out; insured.

The roof of the mill of the Genesee Paper Company, Rochester, N. Y., took fire on June 26. The heat of the sun is said to have caused the tar covering of the roof to ignite. Loss small.

Burr Brothers' rag and cotton warehouse, 115 South Water street, Philadelphia, Pa., has been burned. Loss about $25,000. The adjoining warehouse of the Jessup & Moore Paper Company was damaged to the extent of $5,000.

Fire broke out in the workroom of E. L. Joslin & Co., papier maché manufacturers, Boston, Mass., on June 29, causing a loss of $5,000. Whitney Brothers, paper dealers, and the Franklin Engraving Company, in the same building, were slightly damaged by water and smoke.

In Town.

T. Waller, Hard Lot, N. Y.; J. L. Stevens, North Hoosick, N. Y.; Frank Gilbert, Troy, N. Y.; G. W. Russell, Lawrence, Mass.

Personals.

Frank Gilbert and wife, of Troy, N. Y., started for Watch Hill yesterday for a short sojourn.

E. C. Rogers, of the Massasoit Paper Company, Holyoke, Mass., will sail for Europe to-day on the Saale.

Archie Christie, of London, England, has opened an office at Room 212 Bennett Building, 99 Nassau street, where he has established an American agency for James R. Crompton & Brothers' tissue papers, Riddle & Co.'s paper makers' wires, Crookes, Roberts & Co.'s paper makers' steel, Robert Craig & Son's "Spongia" blotting papers, and Thomas Milne & Son's paper makers' machinery.

W. D. May, of G. W. Millar & Co., and family are spending their summer at their place at Little Silver, N. J.

E. Buerger has severed his connection with John L. Taylor and has accepted a position as salesman with Lewy Brothers.

Accidents.

On June 29 Patrick Regan, an employee of the Haverhill Paper Company, Haverhill, Mass., had a narrow escape from death while at work alone in the calender room of the mill. When found, his right arm had been drawn between the rolls and the flesh from his fingers to his shoulder was horribly burned and lacerated. Regan fainted and was not restored to consciousness for several minutes.

General Notes.

Vernon Brothers & Co., New York, give notice that Wm. H. Critchley, a former salesman, is no longer connected with their house.

Some excellent samples of wood pulp made at the Chasm Mill, Chasm Falls, N. Y., are shown by the Adirondack Water Power and Paper Company.

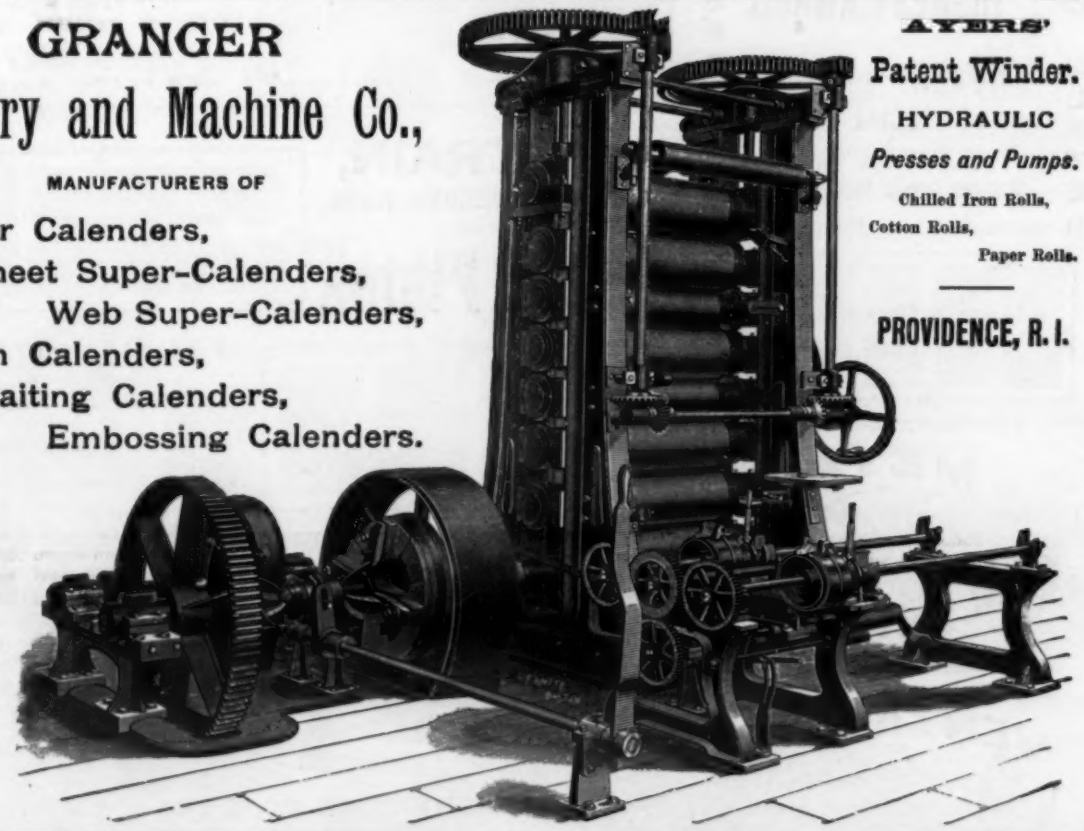
Newport News as a shipping place has made a good showing of late. The value of exports from that port for the month of May was $1,022,746, against $725,280 for the same month in 1893. For the first five months of the present year the value of shipments were $7,314,897, against $3,496,764 for the same period of last year. In 1884 the value of shipments from Newport News was only a little more than one-seventh of their value this year, or $1,152,443.

Valuable marble statuary on the estate of the late S. D. Warren, Waltham, Mass., was destroyed by hoodlums last Tuesday night. Many of the statues were imported by the late owner and were prized very highly by the family. They were in front of the house, and consisted of fountain groups and valuable single figures.

The contract for reproducing 600 copies of the *Official Gazette* of the Patent Office, each copy to contain 272 illustrated pages, has been awarded to the National Lithographing Company, Washington, D. C., for $289. The other bidders were the Norris &

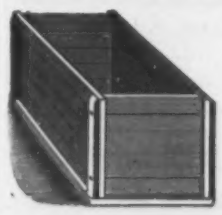
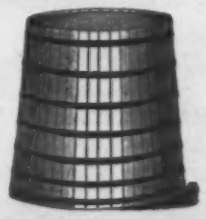
THE "Hamilton" Felt.
"Best and Most Economical Made."
The Longest Runs
are always made with the "Hamilton." Once accustomed to its use, you will buy no other. Prices as low as inferior makes are sold at.
In ordering mention kind of stock used, quality of paper made and speed of machine.
Shuler & Benninghofen, Hamilton, O.

The W. S. Tyler Wire Works Co.,
CLEVELAND, OHIO.
MANUFACTURERS OF
FOURDRINIER WIRES,
Cylinder Faces and Washer Wires.

GRANGER
Foundry and Machine Co.,
MANUFACTURERS OF
Breaker Calenders,
Sheet Super-Calenders,
Web Super-Calenders,
Friction Calenders,
Plaiting Calenders,
Embossing Calenders.

AYERS' Patent Winder.
HYDRAULIC
Presses and Pumps.
Chilled Iron Rolls,
Cotton Rolls,
Paper Rolls.
PROVIDENCE, R. I.

The American Talc Co.,
MANUFACTURERS OF A
SUPERIOR QUALITY OF MINERAL PULP OF ALL GRADES,
PROVIDENCE, R. I.
Mines and Mill: FOWLER, N. Y. | Telegraph Address: GOUVERNEUR, N. Y.
NEW MILL. LATEST MACHINERY. STEAM POWER.

THE GENERAL FIRE EXTINGUISHER COMPANY,
CONTROLLING THE INVENTIONS AND APPARATUS PERTAINING TO AUTOMATIC SPRINKLERS OF
Frederick Grinnell, William Neracher, John Hill, William Kane and others.
INFORMATION AND PROPOSALS FURNISHED AT THE SEVERAL DEPARTMENT AGENCIES, NAMELY:
NEW YORK: 413 Broadway. | BOSTON: 173 Devonshire Street.
PHILADELPHIA: Mutual Life Building. | BUFFALO: City Bank Building.
CHICAGO: 226 La Salle Street. | ST. LOUIS: 710 Odd Fellows Building.
CLEVELAND: Society for Savings Building. | Also at WARREN, OHIO, and COLUMBUS, GA.
AND AT THE
EXECUTIVE OFFICES, PROVIDENCE, R. I.


GEO. WOOLFORD, Manufacturer of all kinds of CEDAR TUBS FOR
In sending for estimates state if measurements are inside or outside and thickness of wood desired.
2240-42-44-46-48 North Ninth St., PHILADELPHIA, PA.
PAPER MILL WORK, DRAINERS, STUFF CHESTS, WATER TANKS, &c.


Peters Company, $481.44, and the Friedenwald Company, $340.

During the next week the Crocker Manufacturing company, Holyoke, Mass., will run on its specialties in blue granite, violet granite, primrose, gray, dark green, light blue, salmon and fawn. Orders should be in at once.

As an outcome of the meeting of the Southern Development Association recently held in New York city, a bureau of information will be established in New York to advertise extensively the advantages of the South, and to secure desirable immigrants for that section of the country.

The employees of the Jeffrey Manufacturing Company, Columbus, Ohio, had their annual outing on June 23. The refreshments, music, &c., were furnished by the company. The day was pleasant and the features of the entertainment induced enjoyment. Such happy intercourse and regard for employees is commendable.

Supplies—Post Office Department.

Following is a list of awards for annual supplies for the Post Office Department:

Bidder 1. C. M. Stoever, Philadelphia.
2. J. C. Addison, Washington.
3. R. Carter Ballantyne, Washington.
4. Easton & Rupp, Washington.
5. B. Chambers, Lodge, Va.
6. Powers Paper Co., Holyoke, Mass.
7. W. A. Wheeler, Jr., New York city.
8. J. P. Nawrath, New York city.
9. Morrill Brothers, Fulton, N. Y.
10. John M. Hinkle, Washington.
11. P. P. Kellogg & Co., Springgeld, Mass.
12. Springfield Envelope Co., Springfield, Mass.
13. Columbia Rubber Works Co., New York City.
14. The Seamless Rubber Co., New Haven, Conn.
15. C. S. Braisted, New York citp.
16. E. J. Brooks & Co., New York city.
17. American Lead Pencil Co., New York city.
18. J. C. Parker, Washington.
19. E. Morrison Paper Co., Washington.
20. D. A. Tower, New York city.
21. Landers, Frary & Clark, New Britain, Conn.
22. J. H. Chesley & Co., Washington,
23. Rogers Manifold and Carbon Paper Co., New York city.
24. The Sadler Co., Baltimore.
25. R. B. Dovell's Son Mfg. Co., Newark, N. J.
26. H. Baumgarten, Washington.
27. J. H. Mann, Philadelphia.
28. H. M. Barron, New York city.
29. Thomas S. Safford, Camden, N. J.
30. Marc M. Michael, New York city.
31. The Manhattan Supply Co., New York city.
32. J. T. Bailey & Co., Philadelphia.
33. Fairbanks & Co., New York city.
34. Chas. T. Carter & Co., Washington.
35. Jones of Binghamton, New York city.
36. Avil Printing Co., Philadelphia.
37. Chas. M. Fox, Washington.

PAPER.

Item 1. 300 rms. white foolscap 12½x16 in. 16 lbs. to rm., $1.09 per rm., bidder 1.

2. 300 rms. white legal cap 8x25 in. 16 lbs. to rm., $1.04 per rm., bidder 6.

3. 200 rms. quarto demy 8x10½ in. 5 lbs. to rm., 59c. per rm., bidder 1.

4. 400 rms. white demy 16x21 in. flat 24 lbs. to rm., $1.74 per rm., bidder 7.

5. 150 rms. do. 28 lbs. to rm., $1.87 per rm., bidder 1.

6. 50 rms. folded linen note 8x10 in. 6 lbs. to rm., 75c. per rm. do.

7. 400 rms. white half medium 11½x18 in. flat 14 lbs. to rm., 98c. per rm. do.

8. White imperial linen ledger stock 23x31 in. flat 72 lbs. to rm.

9. 10 rms. flat cap 14x17 in. 18 lbs. to rm., $1.61 per rm., bidder 1.

10. White bond 18x23 in. 24 lbs. to rm. of 500 sheets.

11. 900 rms. rag print No. 1 white stock flat (a) 100 rms. 17x26 in. 20 lbs. to rm., 80c. per rm., bidder 7; (b) 800 rms. 20x28½ in. 25 lbs. to rm., 97c. per rm., bidder 1.

12. 500 rms. card blotter white blue and buff 19x24 in. (a) 475 rms. 100 lbs. to rm., $6.35 per rm., bidder 1; (b) 25 rms. 120 lbs. to rm., $7.70 per rm., bidder 2.

13. Electric pen 8x13 in. flat.

14. 5,000 sheets manilla stock cardboard.

15. 1,100 dos. scratch blocks 100 leaves ea., (a) 1000 doz. 4½x8 in., 17c. per doz.; (b) 100 doz. 4½x6 in., 14c. per doz., bidder 1

16. 5,000 slide labels 15 16x3½ in., 3 lbs. per M.

17. 800,000 blank examination cards 3½x1 15-16 in., 3¼ lbs. per M., 33¼c. per M., bidder 4.

18. 75 rms. 14x18 white flat cap paper, 14, 16, 18 and 20 lbs. to 480 sheets, 5 7-10c. per lb., bidder 1.

19. 500 rms. 17x22 white flat folio 24, 28 or 30 lbs. to 480 sheets, 5½c. per lb., do.

19a. 15,000 sheets onion skin paper 14x17 in.

20. 10,000 sheets 22x28 3 ply, 120 lbs. to 500 sheets Bristol cardboard, standard colors, 1 5-100c. per sheet, bidder 2.

20a. 15,000 do. 4 ply 140 lbs. to 500 sheets white Bristol cardboard, 1 475-1000c. per sheet, bidder 1.

20b. 4,000 do. 3 ply 120 lbs. to 500 sheets do., 1 26-100c. per sheet, do.

21. 8000 sheets 6 ply do. white blank cardboard 2c. per sheet, bidder 2.

21a. Do. 6 ply railroad cardboard, red, blue, green and yellow, 3 97 100c. per sheet, bidder 4.

22. 200 rms. 24x38 No. 1 machine extra finish flat book, 40, 50 or 60 lbs. per 480 sheets, 4c. per lb., bidder 2.

22a. 20 rms. 26x40 No. 1 do., 3 9-10c. per lb., bidder 1.

23. 10,000 strawboard commission tubes 17¼x1¼ in., $8.50 per M., bidder 8.

24. 200,000,000 printed facing slips 5x3 3-16 in., 36 to sheet, 1 34-100c. per M., bidder 9.

24a. 200,000 card slide labels from 4 to 9c.. do.

PACKING BOXES.

25. 600 1 in. thick 19½x25¼x14 in. 55c. ea.; (a) 400 do. 14x20x14 in., 40c. ea.; (b) 500 do. sides ¾ in. thick ends 1 in., 13x17x11½ in., 29½c. ea., bidder 10.

ENVELOPES.

26. 20,000 adhesive white heavy XX 8⅜x3⅝ in. printed $1.20 per M.; plain $1 per M., bidder 11.

27. 500,000 do. 8⅜x3⅝ in. Departmental, printed $1.20 per M.; plain $1.15 per M., bidder 12.

28. 40,000 do. 10 3-16x4⅛ printed $1.57; plain $1.47 bidder, 11.

29. 10,000 do. best quality XX 3½x6 5-16 in., printed 80c. per M.; plain 70c. per M., bidder 11.

30. 5,000 do. 5½x3¾ in. printed and plain.

31. 35,000 do. heavy XX 9⅝x4 in. printed $1.29 per M.; plain $1.19 per M., bidder 11.

32. 5,000 do. 10¼x4¾ in., printed $1.70 per M.; plain $1.60 per M., bidder 11.

33. 20,000 do. 11x5 in., printed $2.01 per M.; plain $1.81 per M., bidder 11.

34. Adhesive XXX pure linen No. 5, 3½x5½ in., 91c. per M., bidder 12.

35. 5,000 baronial 70 lb. No. 1 white linen 4⅛x5¼ in.

36. 15,000 adhesive XXX pure linen No. 6, 3½x6 in., $1.09 per M, bidder 12.

WRAPPING PAPER.

150. 35,000 rms. for facing slips, 20x29 in., $1.09¾ per rm., bidder 1.

151. 6,000 rms. 20x24 in., 91c. per rm., do.

152. 1,000 rms. 26x40 in., $2.39 per rm., bidder 29.

TWINES.

153. 1,000 lbs. flax No. 24 b. cable laid, 32c. per lb., bidder 16.

154. 500 lbs. do. equal to No. 12 b. c. 11½c. per lb., bidder 8.

155. 1,300,000 lbs. small jute, 7 6-100c. per lb., bidder 31.

156. 10,000 lbs. cotton, 11½c. per lb., bidder 30.

158. 7,000 lbs. coarse jute, 7 31-100c. per lb., bidder 2.

Corrosion of Pipes by Electrolytic Action.

A very valuable paper has been presented by J. H. Farnham before the American Institute of Electrical Engineers on the corrosion of water and gas pipes through the electrical currents of trolley lines. He summarizes his conclusion as follows:

1. All single trolley railways employing the rails as a portion of the circuit cause electrolytic action and consequent corrosion of pipes in their immediate vicinity, unless special provision is made to prevent it.

2. A fraction of a volt difference of potential between pipes and the damp earth surrounding them is sufficient to induce the action.

3. Bonding of rails or providing a metallic return conductor equal in sectional area and conductivity to the outgoing wires is insufficient to wholly prevent damage to pipes.

4. Insulating pipes sufficiently to prevent the trouble is impracticable.

5. Breaking the metallic continuity of pipes at sufficiently frequent intervals is impracticable.

6. It is advisable to connect the positive pole of the dynamo to the trolley lines.

7. A large conductor extending from the grounded side of the dynamo entirely through the danger territory, and connected at every few hundred feet to such pipes as are in danger will usually insure their protection.

8. It is better to use a separate conductor for each set of pipes to be protected.

9. Connection only at the power station to water or gas pipes will not insure their safety.

10. Connection between the pipes and rail or rail return wires outside the danger district should be carefully avoided.

11. Frequent voltage measurements between pipes and earth should be obtained, and such changes in return conductors made as the measurements indicate.

Legal Decisions.

[REPORTED FOR THE PAPER TRADE JOURNAL].

Unlawful Preference of Creditors.—When a creditor of an insolvent debtor secures an unlawful preference by the transfer of property, the transfer will, at the suit of the assignee in insolvency, be wholly void. It will not be partly valid because the creditor, to secure the preference, paid in money part of the agreed price of the property. And where the preference is given by transferring property to the creditor and others, who pay part of the agreed price in money, the transfer will not be valid as to them, if they knew the purpose was to give a preference to the creditor. A judgment declaring such a transfer void relates back to its date, so that the transferee may be charged with the value of the use of the property, and for the damages to it while in his possession; and if, when pursuant to the judgment, the property is delivered to the assignee, it appears to have been damaged, the court may then ascertain the amount thereof, and modify the judgment accordingly.—*Thompson v. Johnson, (Supreme Court of Minnesota), 57 N. W. Rep. 223 (174).*

The Nature of a Warranty.—A warranty, properly so called, can only exist where the subject matter of the sale is ascertained and existing, so as to be capable of being inspected at the time of the contract, and collateral engagement that the specific thing so sold possesses certain qualities; but the property passing by the contract of sale, a breach of the warranty cannot entitle the vendee to rescind the contract and revest the property in the vendor without his consent. * * * But where the subject matter of the sale is not in existence or not ascertained at the time of the contract, an engagement that it shall, when existing or ascertained, possess certain qualities, is not a mere warranty, but a condition, the performance of which is precedent to any obligation upon the vendee under the contract, because the existence of these qualities being part of the description of the thing sold, becomes essential to its identity and the vendee cannot be obliged to receive and pay for a thing different from that for which he contracted.—*Carleton v. Lombard, Ayers & Co. (Supreme Court, General Term, First Department), 25 N. Y. Supp. 570 (178).*

Measure of Damages for Trover and Conversion.—In an action for the value of goods consigned for sale to a commission company, and received and converted by it, an inventory of such goods in the company's hands remaining unsold, furnished the consignor by its manager shortly before the conversion, is competent to prove the amount of goods the company had on hand at the date of the inventory. It is no breach of any well settled rule of evidence or of law which permits the vendor to recover the full value of all the goods which he could trace into the hands of the commission house, and to recover upon the basis that the packages were unbroken and full, unless that house—by a satisfactory and competent proof—showed that they had disposed of a portion of the goods under their agency, and had either remitted the proceeds thereof or had sent to the vendor the accounts against the people who purchased from them. It was the duty of the commission house to keep strict account of all the goods, and it would have been entirely within their power to make complete and satisfactory proof as to every package and every pound which passed out of their possession. Failing in this, the company is properly chargeable with the full value of what they got.—*Mouat v. Wood (Court of Appeals of Colorado), 35 Pac. Rep. 58 (221).*

Rights of Creditors.—The doctrine that firm assets must be first applied to the payment of the firm's debts is a principle of administration adopted by the courts when from any cause they are called upon to wind up the firm business, and find that the members have made no disposition or charge upon its assets. This is accomplished by marshaling the assets, by applying the partnership property to the partnership debts. The right of the firm creditors is "worked out through the partners," the meaning of which is that they may demand the primary application of the firm assets to the payment of their debts. As the right of the firm creditors "is worked out through the partners" it necessarily follows that whatever the firm, with the consent of all its members, does in good faith with the partnership property is binding upon them. If then the firm had the right to assume, by and with the consent of both of its members, the individual debts due them respectively and gave the firm notes, and thereby assumed their payment, they became firm debts and should share pro rata in the distribution of the proceeds arising from the sale of the partnership assets with the other firm creditors. This is said to be the conversion of debts, so that if they were separate debts of the respective partners they become by the consent of the members of the firm the joint debts of all the partners, and will thereafter be treated as such.—*In re Edwards (Supreme Court of Missouri), 25 S. W. Rep. 905 (250).*

Liability of Connecting Carriers for Injuries to Goods.—Where goods are delivered to a common carrier for transportation to a point beyond its own line, under a through bill of lading, which, however, contains a stipulation exempting the receiving carrier from liability for loss or damage occurring beyond its own terminal, and the goods are not delivered to the consignee at all, the presumption of law is that they were lost by the receiving carrier, and he will be liable unless he can show that the consignment was safely delivered to the connecting carrier. The burden is on him in such case; and the shipper, having shown non-delivery by the discharging carrier, is entitled to recover. On the other hand, where, upon such shipment and bill of lading, the goods have been delivered by the connecting or final carrier to the consignee, or have been carried to the place of consignment for delivery, and are then in a damaged condition, the presumption of law is that they were delivered by the receiving to the connecting carrier in good condition, and that the damage occurred while they were in the possession of the delivering carrier; and therefore, in an action against the receiving carrier for damages occasioned, not by the loss, destruction or non-delivery of the property, but by the injuries inflicted upon it at some time before delivery to the consignee, the presumption of safe delivery by the first to the second carrier must be overcome by evidence that the damage occurred before the shipment passed out of the possession of the first carrier. The burden in this latter case is upon the shipper, and unless he discharges it he fails to make out his cause of action. The presumption of law being that the delivering carrier has damaged the property, in an action by the owner against him the shipper need only prove the shipment in good condition and the delivery in damaged condition.—*Louisville and N. R. Co. v. Jones (Supreme Court of Alabama), 14 So. Rep. 1114 (346).*

Rusting of Iron.

Prof. V. B. Lewis, of the Royal Naval College, Greenwich, at a recent meeting of the Institute of Naval Architects in London presented some interesting remarks as to the rusting of iron, which he explained is a definite chemical action due to the conjoint action of air, moisture and carbon dioxide upon the metal. The increased rate of action may be due, he said, either to increase in chemical action brought about by local increase in temperature, or it may be due to galvanic action set up between portions of the same metal at different temperatures.

The fact that the double bottom plates of ships near the boiler corrode more rapidly than similar plates in other parts of a vessel is undoubted, and the increase in temperature near the boiler is the only factor. It is also noteworthy that the plates at the bottom of the cellular spaces, which are kept cool by contact with the sea water, do not corrode; and cases are not wanting in which parts of a plate which get locally warmer than other parts—although the difference can only be a few degrees—corrode much more rapidly than the cooler portions.

Experiments show that the rapid corrosion found in the double bottoms near the boilers, or other sources of heat, is due to galvanic action, and not to rise of temperature simply increasing chemical activity; but it must not be forgotten that when ashes are drawn and quenched with water—especially if sea water be used—gases having a corrosive action on metals are very apt to be liberated, and probably tend to increase the corrosion found near the boilers.—*Manufacturer and Builder.*

Wire Ropes.

At a recent meeting of the Yorkshire College Engineering Society in England, Herbert Cheesman, of the Hartlepool Ropery Company, Hartlepool, England, read a paper on "Wire Ropes," of which the following is an abstract: After describing the general construction of wire ropes, the lecturer urged the necessity of using wire having the same modulus of elasticity throughout one rope. The object of all rope manufacturers is to obtain an ultimate strength for the whole rope equal to the sum of the strength of the separate wires, and the only way of attaining this result is to use material of precisely similar elastic properties. Another very important point brought forward was the initial torsion given to each wire in the formation of the strands by the "sun and planet" mechanism.

This system of preparing the strands is very generally supposed to prevent any twist being given to the separate wires, but it was clearly demonstrated that a slight axial rotation of each wire is necessary to entirely prevent any torsional stress being put upon them. Mr. Cheesman has now brought out a machine which enables the operators to adjust this axial movement to the requirements of the lay of the strand. In speaking of the rotation of wire ropes, Mr. Cheesman pointed out that all long ropes not of a perfectly cylindrical form must necessarily rotate, though they may be fixed at both ends, for they always tend to follow the path of the greatest bearance, which is down the spiral of the rope.

This tendency increases with the weight lifted, and he had observed that by raising a kibble empty it made five revolutions, while with the weight of two men it made eleven, and when filled with earth, nineteen. The rotation of the rope is advantageous in equalizing the wear. Illustrating the advantages of internal lubrication, Mr. Cheesman quoted the experiments of A. S. Biggart. An unlubricated rope stood 16,000 bends before fracture commenced, while the same rope when lubricated stood 38,000 bends over the same pulley. Another similar test showed that the life of the rope was just doubled by internal lubrication.

Economy of Superheated Steam.

The economical advantages of superheated steam in small motors were shown by tests of a Serpollet motor conducted by M. Seguin. The motor had a single horizontal cylinder, 5.1 inches in diameter by 5.1 inches stroke. The cut-off was fixed at 66 per cent. of the stroke; the admission pressure was 58 pounds per square inch, and the revolutions 284 per minute. The brake horse power on a four hours' trial averaged 4.57 horse power, and the steam consumption was but 29.87 pounds per brake horse power per hour.

Comparing this result with those obtained with somewhat similar sized motors at the Plymouth trials of the Royal Agricultural Society, it will be found that the best engine there, a compound one, took 35.76 pounds of steam per indicated horse power, while the best of the single cylinder engines took 37.75 pounds of steam per indicated horse power. Practically the whole of the advantage shown by the Serpollet motor must, says *Engineering*, be credited to the boiler, which supplies superheated steam.

This boiler consists of a stout tube flattened so as to deform the passage through into a narrow slit. This tube is coiled, and has one end connected with a feed pump, and the other with the engine to be driven. The boiler used in the above tests had a heating surface of 26.8 square feet, and the grate area was 2.9 square feet. The steam, though showing on the gauge a pressure of 58 pounds per square inch only, had a temperature of 1009° Fahr. on issuing from the coil, which had fallen to 572° Fahr. at the steam chest.

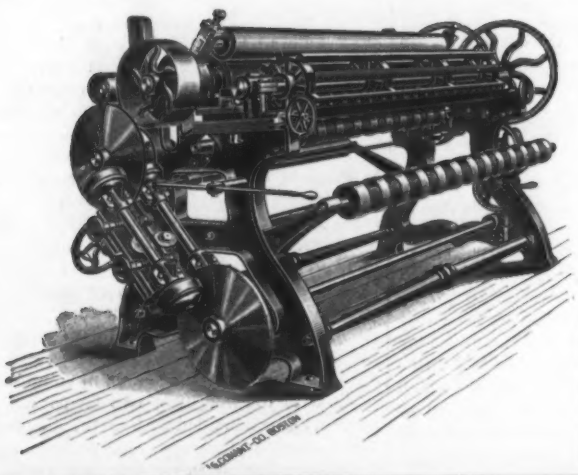
The temperature of saturated steam at 58 pounds pressure is about 306° Fahr., so as used in the engine the steam was superheated by some 266°. The output of steam was just 4.9 pounds per square foot of heating surface per hour. The fuel used was briquettes having a heating value, as tested in a calorimetre of 8.28 pounds of water evaporated from and at 212° Fahr. per pound of fuel, and as used in the boiler the efficiency was 67.3 per cent.

Foundations in Quicksands.

At the International Congress of Engineering held in Chicago, F. Neukirch, of Bremen, read a paper on making foundations in quicksand. The sand on which the foundation is to rest is converted into solid concrete by blowing into it by air pressure powdered dry hydraulic cement. For this purpose a 1½ inch pipe is used which is drawn to a point at its lower end, and has three or more three-eighth inch holes. This pipe is joined at its upper end by a rubber tube to an injector, which is connected to a source of compressed air, and is fed with dry cement.

The sinking of the pipe to the depth required is facilitated by blowing air through it during its descent, and setting it in motion. Depths up to 19 feet can thus be quickly reached. This done, the cement is fed in and carried into the sand by the air, which being forced up through the former insures a thorough mixture of it and the cement. The tube is then slowly withdrawn, the supply of cement being continued until it reaches the surface. The concrete formed in this way takes several weeks to harden and requires some months to attain its full strength.

The whole area to be treated is divided into a number of small areas of about one square foot each. The tube being sunk successfully and operated on each of the squares, it is found that the mixture of the sand and cement produced occupies less space than the sand alone did before the operation. It has been used successfully in cofferdam work, also in sewer work, where it had to be laid in quicksand, it having proved highly successful in each case.



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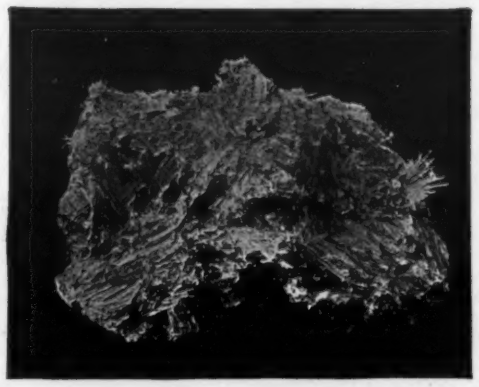

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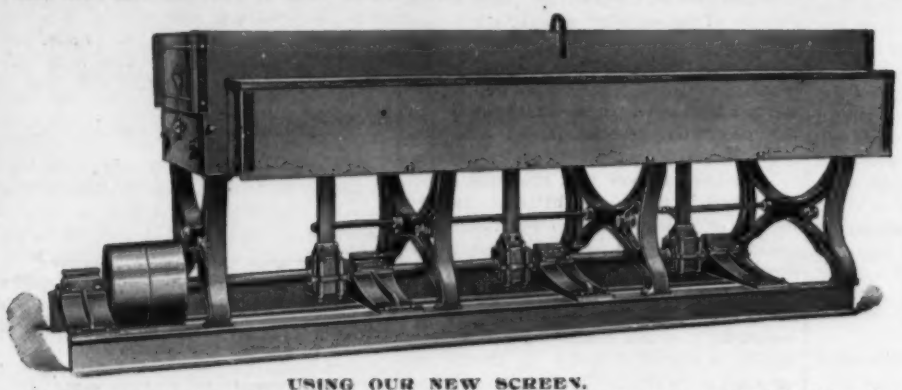

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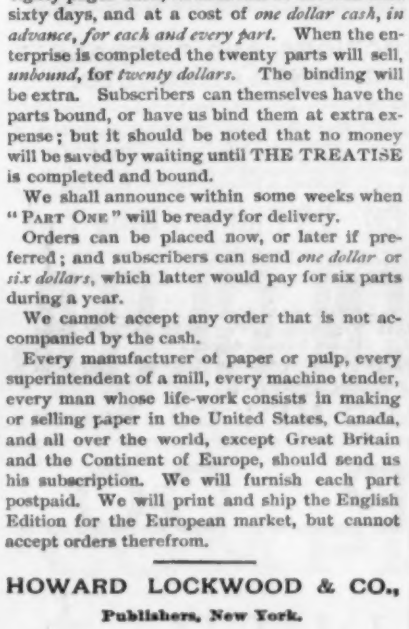

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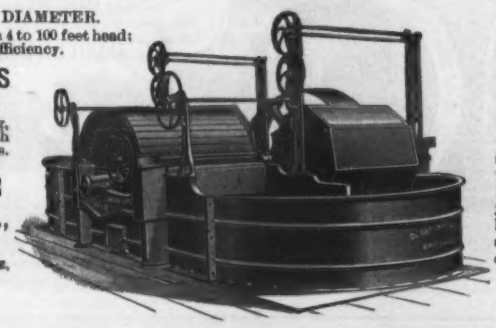

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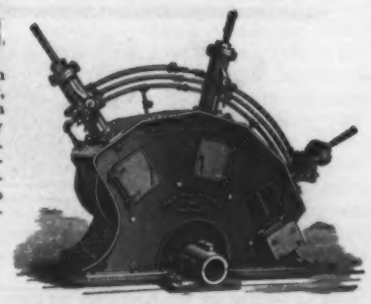

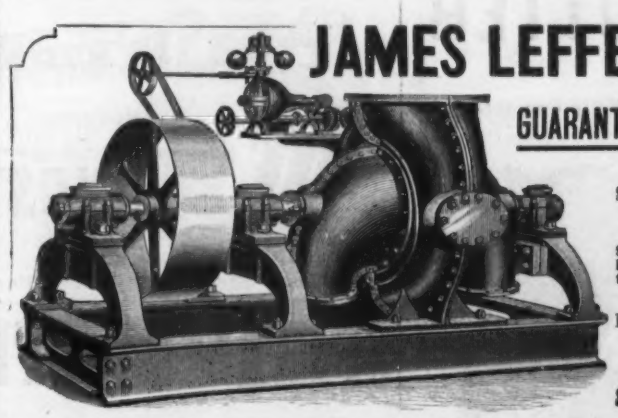

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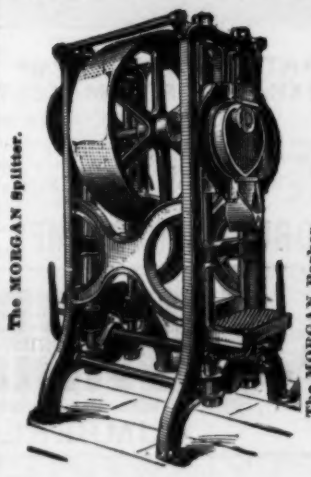

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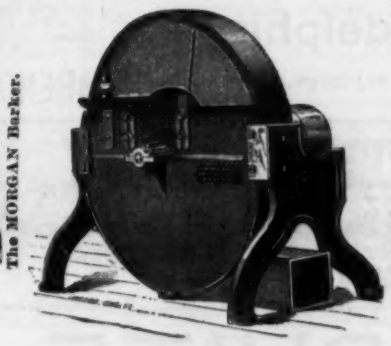

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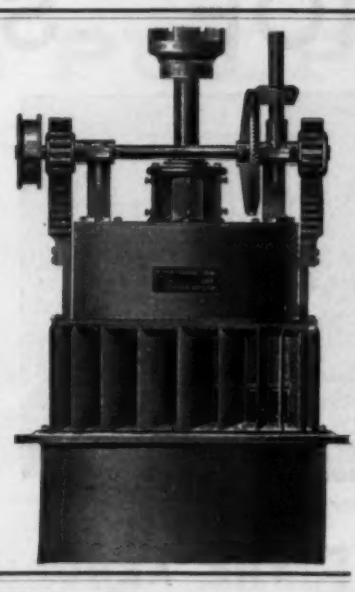

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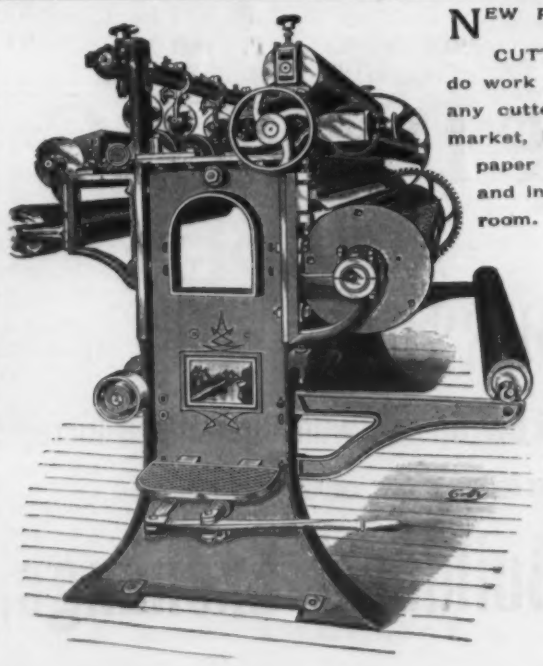

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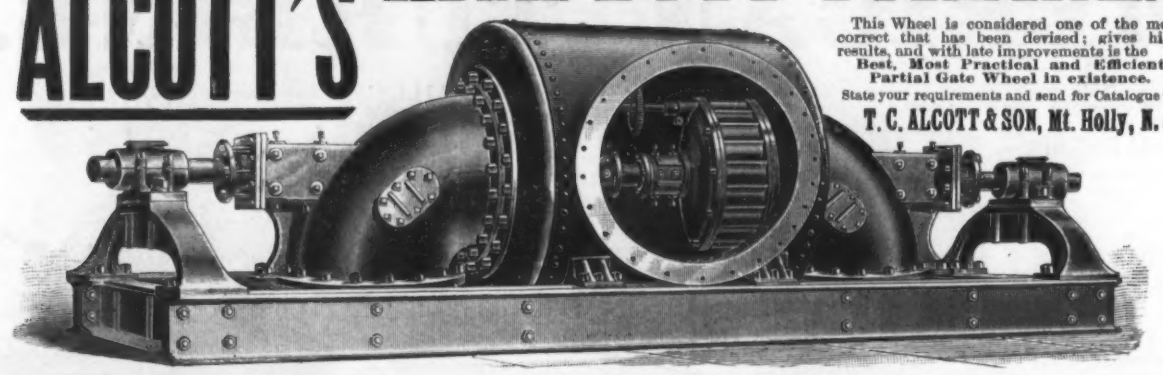

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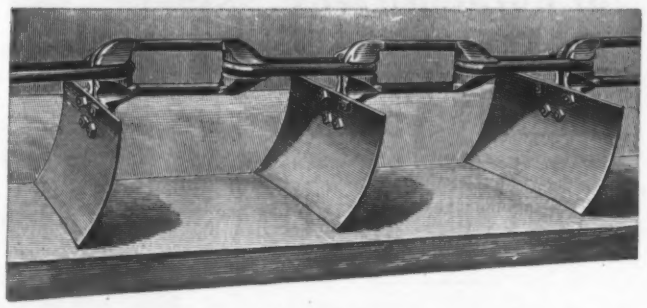

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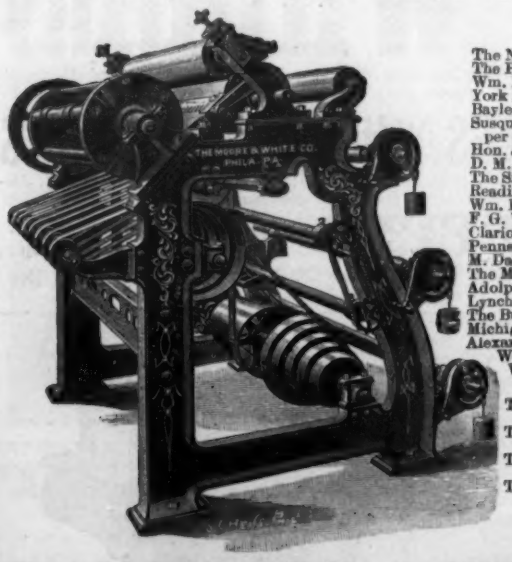

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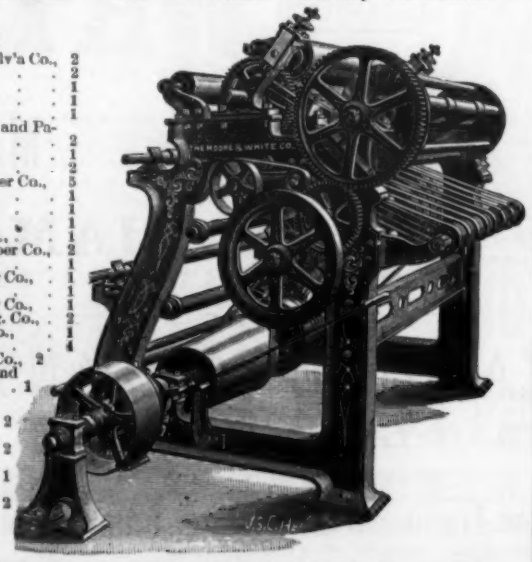

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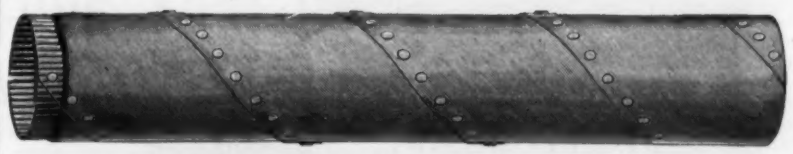

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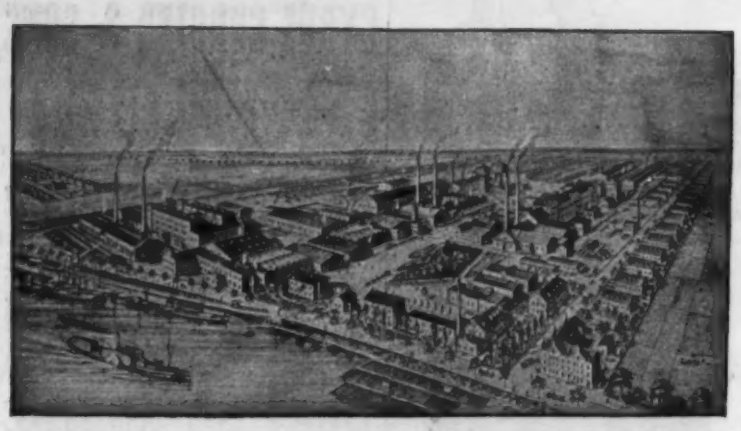

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The United Alkali Company.

The London *Financial News* of recent date devotes considerable space to the consideration of the condition of the United Alkali Company, its tenor giving the impression that other motives than a desire to give an unbiased statement of facts prompted the article. We make the following extracts as being of general interest to the chemical trade:

"This great chemical combination, which was to monopolize the manufacture of bleaching powder, soda ash, caustic soda, white alkali, sulphate of soda, crystals of soda, chlorate of potash, sulphuric acid, &c., has never yet realized the glowing anticipations of its promoters. In the first year there was a dividend of 5 per cent. on the ordinary shares, and in 1892 the distribution amounted to 6 per cent., but returns like these could not be considered satisfactory, having regard to the prosperity of other branches of the chemical trade and to possibilities. It is certainly a curious thing, if this company is established on sound lines, that there should have been a fall of 55 per cent. in the value of its ordinary shares. What is perhaps more remarkable still is that the insiders and a good many of the vendors appear to have been selling out pretty freely during the past year or so. It is as well at this point to explain that the nominal capital of the company is £6,000,000 in shares and £2,500,000 in debentures. The prospectus stated that the bulk had been already subscribed by the vendors and their friends, a large portion having been taken in payment for the properties acquired. To be exact, the purchase money of the business taken over in the first instance (others were bought subsequently) was £6.851,500, payable as to £1,638,290 in 7 per cent. preference shares, as to £2,708,960 in ordinary shares, as to £1,470,430 in debentures, and as to £1,033,820 in cash. The amount offered to the public was £302,650 ordinary, £559,970 preference, and £371,930 debentures—together £1,334,550.

"Although the amount was comparatively small, there still remains some £600,000 of the ordinary and preference shares unsubscribed for. For the first fourteen months the accounts showed a profit, after paying debenture interest, of £536,870; but to this was to be added the sum of £52,786, 'interest paid to vendors on cash portion of purchase money.' The assets of the company were entered at £7,415.236, and, considering the magnitude of the undertaking, both as regards extent and capital, the 5 per cent. paid of the ordinary shares was by no means reassuring. We have before us the last annual return, made up to March 30 last, and deposited at Somerset House, from which we find that the following shares have been transferred by their respective original holders:

	Description of Shares	
VICE-PRESIDENTS.	Pref.	Ord
James Hawke Dennis	....	2,000
Colonel Gamble, C. B.	500	500
Holbrook Haskel	...	2,000
J. K. Huntley	....	1,000
DIRECTORS.		
Charles Wigg (vice-chairman)	634	362
W. J. Menzies	3,298	4,200
George Pilkington	935	1,613
Robert Shaw	225	500
George L. Wigg	500	1,000
Alfred Allhusen (managing director)	100	....
C. E. Barlow (managing director)	....	1,400
James Tennant (managing director)	41	44
J. R. Wylde (managing director)	10	86
Totals	6,243	15,705
OTHER SHAREHOLDERS.		
*Sir E. R. Sullivan, Bart.	1,250	1,207
*Charles W. Hazlehurst	570	....
Earl of Wemyss and March	1,740	....
Arthur Crosthwaite	745	382
*Richard H. Davis	122	402
*James McBryde	....	300
W. A. Coats	1,040	....
*John H. Chance	700	....
*Alexander M. Chance	100	....
Lieut. Col. Chas. S. Gardner	350	....
John Williamson	250	....
George Coats	500	....
A. M. Brown	754	118
John Joynson	286	507
M. Balmain and W. Henderson	1,220	....
*Thomas Snape, M. P.	....	1,002
*Matthew Steele	....	852
*Walter J. Wigg	....	135
*Phillip J. Worsley and another	277	....
*Joseph Wethered	200	1,064
*E. E. Wigg	161	204
*Eglinton Chemical Company	....	3,500
*Leonard Pilkington	900	25
*Howard C. Banister	....	100
Totals	11,165	12,748

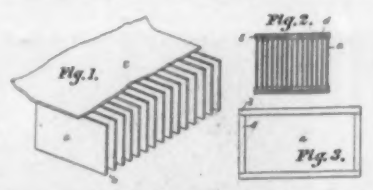
* Persons who are or have been connected with the chemical trade.

"Altogether, the directors, vice-presidents and large shareholders have transferred shares of the two denominations amounting to £448,610. It scarcely looks, on the face of these facts, as if the future prospects of the company were particularly brilliant. At the same time, the general dividend, even on £89,000, will not stop at 100 per cent. Of course, the Band Mines, Limited, is largely interested in the matter; for it holds the bulk of the Wemmer, Ferreira and Worcester Deep Level Company's shares."

Applying Borders or Binders to Paper Box Blanks.

An illustration is given of an improved method of applying borders or bindings to the edges of paper box blanks and other similar articles, and more especially to applying the border to a series of such blanks simultaneously.

It further consists in a block of box blanks having their edges covered with a continuous sheet of adhesive material, extending down between the blanks and adapted to be separated by having a sharp instrument inserted between the blanks.



METHOD OF APPLYING BINDERS TO PAPER BOX BLANKS.

The blanks are arranged side by side in a convenient rack, parallel with and at some distance from each other, the distance depending upon the width of the border desired. The farther apart the blanks are placed the wider will be the border. After the blanks are arranged in the manner stated the material which is to be used for a binder or border is covered with paste or other adhesive substance on that side which is to be applied to the blanks and then placed upon the edges of the blanks and caused to adhere thereto by slight pressure applied to the outside. The border will thus be made to adhere to the edges only of the blanks. The rack is then removed and the outside blank is forced toward the next one, while at the same time the finger nail or a suitable instrument is drawn over the binding material between the two blanks, thus forcing the binding material which covered the space between the blanks down between the two, so that when the blanks are brought close together that part of the border which extended over the space between the blanks will be caused to adhere one-half to the side of each blank. The same operation is performed for each blank of the series. After all of the blanks have been thus treated they form a substantially solid block, adhering closely together. To separate the blanks from the block thus formed insert a thin knife or other sharp instrument between the blanks and cut the border at the point where it was bent by bringing the two adjacent blanks together.

Figure 1 represents a series of blanks having the border applied to the edges, but before the blanks have been brought together; Fig. 2 represents a vertical, cross section of the same after the blanks have been brought together, and Fig. 3 represents a blank bound by this method separated from the block.

a represents a series of blanks arranged in vertical positions adjacent to each other and at some distance apart, *b* the space between two adjacent blanks, *c* a sheet of binding material covering the edges of the blanks and the spaces *b* between them, and *d* that part of the border which extends down on the sides and ends of the blank.

This method of applying the borders is said to present the following advantages: A very great saving of time, inasmuch as a great number of blanks may be covered simultaneously; a great saving in material, inasmuch as a narrower border is practicable and there can be no waste in cutting the material; greater neatness and uniformity, inasmuch as the border is always of the same width on a given number of blanks and each border of a uniform width.

A New Bleaching Product.

A new bleaching substance has recently been invented which is prepared in a dry state as a salt, and which, when mixed with water, yields a bleaching fluid containing peroxide of hydrogen (H_2O_2) that can be used for bleaching all kinds of textile materials. This new product is called peroxide of sodium, and can be cheaply manufactured in large quantities. When this product is added to diluted acids, *e. g.*, sulphuric or hydrochloric acids, there is formed peroxide of hydrogen and a neutral soda salt, both of which remain dissolved in the solution.

It is known that when certain bodies, such as magnesia, are added to peroxide of hydrogen its bleaching power is increased, and with the fluid containing the mixture the power of bleaching is still further augmented.

In order to prepare "bleaching soda," as the new product is called commercially, an equivalent part of a neutral anhydrous salt, such as sulphate or chloride of magnesia, is mixed with the sodium peroxide. Or, instead of the above, a mixture of simple salts, such as chlorides of magnesium or calcium, can be employed. This mixture, which constitutes the "bleaching soda," contains a large quantity of oxygen, and can be preserved without change in closed vessels. A bleaching fluid prepared from this by dissolving it in water, so that the sodium peroxide is in slight excess, is free from hydrogen peroxide in consequence of the presence of free alkali in the solution. In the presence of the alkaline earths, viz., magnesia or lime, a quantity of the hydrate of these bodies are precipitated, which are found to be more stable than hydrogen peroxide on heating. For materials which are difficult to bleach it is necessary to increase the quantity of these precipitated hydrated peroxides in the bleaching fluid, and to use relatively more calcium than magnesium.

"Bleaching soda" prepared in the above way contains at least 7½ per cent. of available oxygen. It is a dry powder, which can be preserved in tin canisters, and does not lose its bleaching properties by keeping.—*Paper Trade Review, London.*

There is one crudity about electrical work which is perhaps more a problem for the electrician than for the engineer, and yet it is of interest from the power standpoint. A 600 horse-power engine, for instance, is connected up to a 600 horse-power generator. In case of an overload the engine would run up to 800 or 900 horse-power, but when the electric load increases unduly the fuses blow or the circuit breakers drop, and that unit is dead until matters can be readjusted. It is as though a boiler were fitted with a fusible plug that would melt and put the fire out when the pressure got above the allowable limit. Can not there be an electrical safety valve which will prevent a dynamo from furnishing over-much current without stopping it altogether?—*Power.*

GEORGE M. NEWHALL ENGINEERING CO., LTD.,

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FOR

COMPLETE PAPER AND PULP MILLS,

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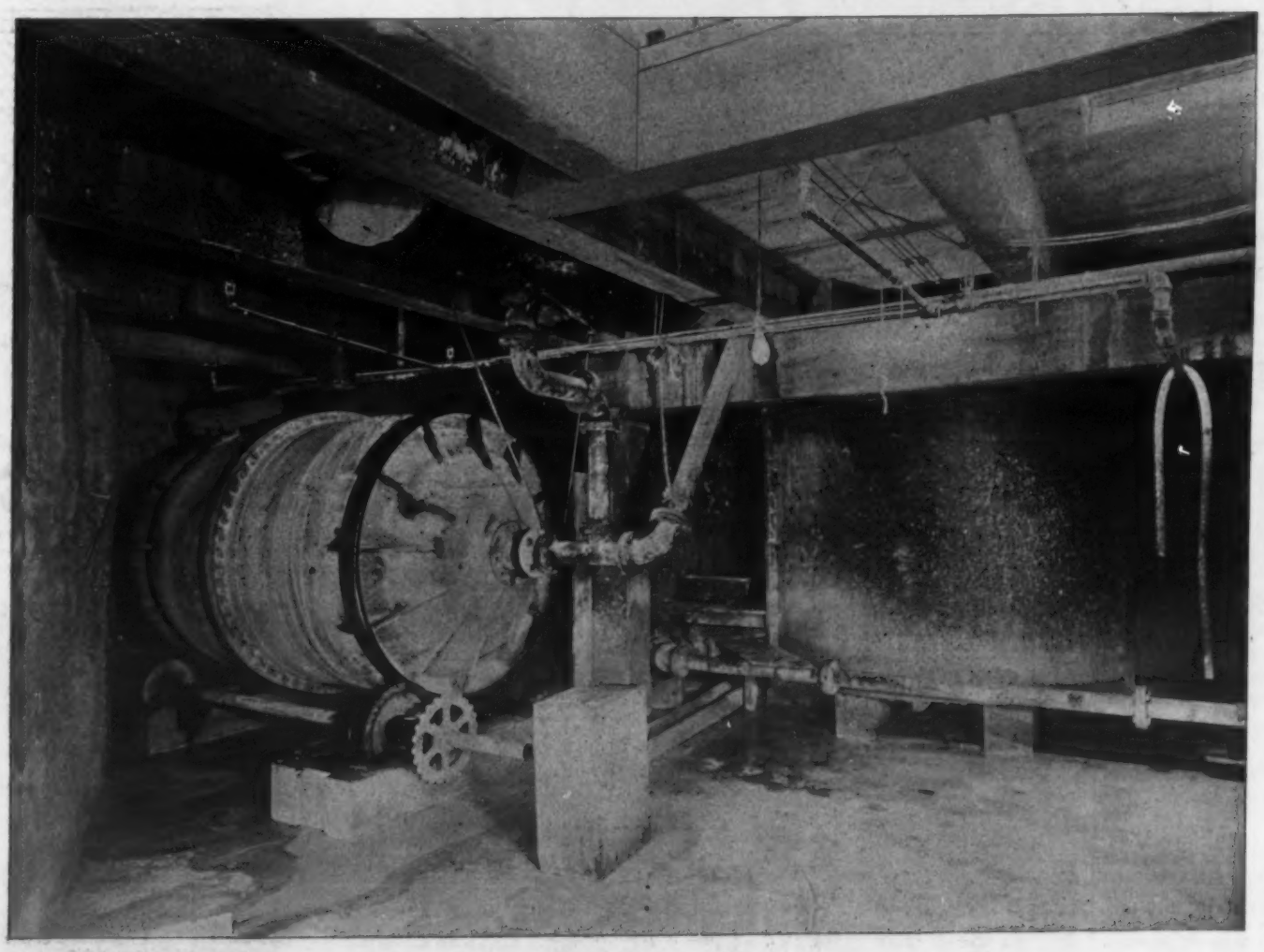

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all of which are successfully applied and approved by practical Paper and Pulp Makers:

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Stuff Chest.

It will pay Paper and Pulp Makers to look into the merits of these new appliances. Photographs, prices and full information furnished upon application.

GEORGE M. NEWHALL ENGINEERING CO., Ltd.

No. 136 South 4th Street,

PHILADELPHIA.

Patent Water Pipe.

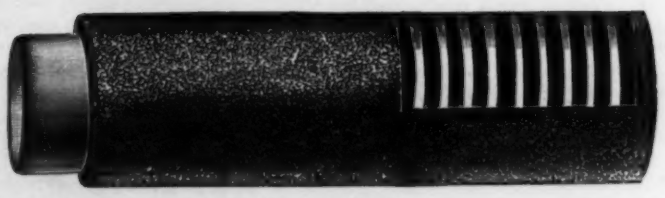
Wooden pipes have been used for hundreds of years in conveying water, and to-day the big siphons and mains for conducting water for the irrigation of arid lands in Arizona are made of sections of wood firmly banded together. It is on record that wooden pump logs have lasted for 249 years, after having been under ground for that length of time.

Having this feature of durability in view, as well as other characteristics involving economy, &c., the inventor of what is known as Wyckoff's patent pipe determined to utilize wood for the construction of water pipes, with such added advantages as experience and the progress of the times have suggested. The accompanying cuts show the design of construction. In making the pipe white pine logs are sawed in sections about 8 feet long, after which they are bored of the required size with the hollow auger, making a smooth tube. The sap is then turned off from the section, leaving only the solid timber.

After being sufficiently dried and thoroughly inspected it is banded with heavy hoop iron, spirally wound and pressed on tightly. Where a chamber is to be made the iron passes around two or three times extra, making the joint very strong.

The iron as laid on passes through a preparation of hot cement, thus giving it a coat under as well as over the band. This method prevents cracking and chipping off the cement from the iron, as would be the case if it were coated and dried on before passing through brake when banding the pipe.

WYCKOFF PATENT WATER PIPE.



WATER MAIN.

The nearness of the bands to each other and the weight of the iron are regulated by the pressure to be sustained in actual use.

In jointing the pipe a solid tenon 4 inches long is made upon each section of pipe after the timber has been compressed by the banding. After jointing the pipe is subjected to a water pressure test with steam pump about 10 per cent. heavier than the required pressure where used.

After testing, the pipe is thoroughly dried, and a double coat of imperishable cement is applied by placing the section of pipe upon revolving rollers heated by live steam passing through them while partly immersed in hot cement. The section is left on the rollers until covered with the pitch, which is thoroughly set into the timber. It is then partially cooled and placed upon a second set of rollers, thus giving it a second complete coat. This coating preserves the timber on the outside, and protects the iron bands which strengthen the pipe from mineral or other corrosive substances found in the soil.

It is believed that Wyckoff's patent wood pipe has advantages which will commend it to use in factories as well as in cities and villages, and anyone who desires further information as to its durability, method of construction, cheapness, &c., can address the manufacturer, the Western New York Manufacturing Company, Tonawanda, N.Y.

Apparatus for Purifying Water.

In softening water by means of lime it is well known that the precipitate takes many hours to settle, and that although by the use of a salt of alumina the subsidence of the precipitate may be materially hastened, yet the clarification of the water is tedious and in many cases but imperfectly effected.

A patented process for rendering the precipitation more rapid and the purification more complete is carried out by conducting the operation in a tank containing precipitate from a previous operation. After mixing the precipitating agent with the water and so obtaining a new precipitate the whole is agitated with the old precipitate and then left to settle. Two tanks are used so that settlement may be going on in one tank while purified water is being drawn from the other. The purified water is also treated with combustion gases by which any remaining alkaline matter becomes bicarbonated.

The apparatus has a chamber inside of the tank, the precipitating agent being supplied to this chamber and by an injector driven out through a funnel-like passage into the tank, while at the same time water flows from the tank into the chamber above mentioned. In this way a rapid circulation and very effectual mixing is obtained. To stir up the old precipitate perforated air pipes are provided at the bottom of the tank and at the proper time air is driven through these into the tank by means of an injector. The draw-off pipe is movable and is controled by a float, so that its mouth is always maintained at a short distance below the surface of the water in the tank. The combustion gases are introduced into this movable draw-off pipe.

The amount of carbonic acid introduced into the softened water is very small, and simply has the effect of restoring the artificially softened water to the condition of a naturally soft water. Continuous carbonating is not always necessary.

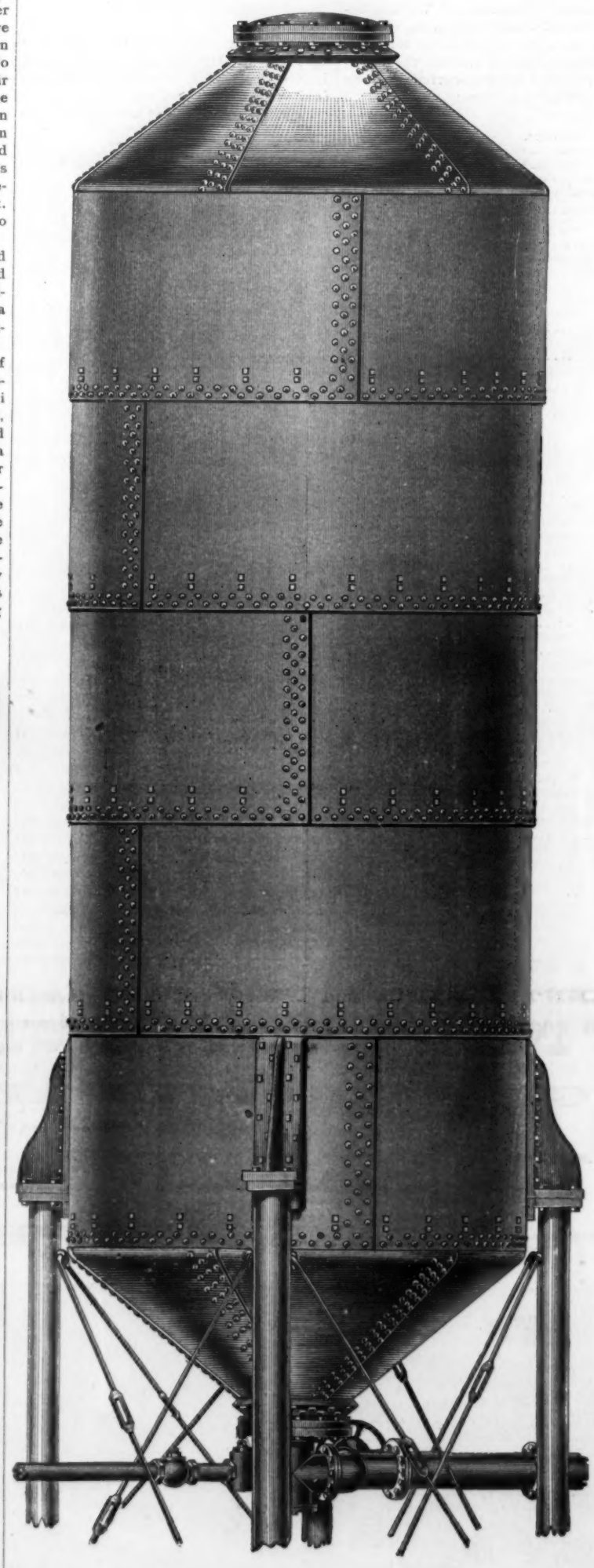
The process softens water by means of the cheapest chemicals used in the most economical proportions. As the excess of alkali thus introduced into the water is quite small, the subsequent carbonating of the softened water is easily accomplished, and thereby a soft water is produced which is suitable for all purposes; it is palatable, forms no deposit in pipes or mains, and cannot injure the most delicate skin or fabric. By the system of treating the hard water in large volumes intermittently more reliable results are said to be obtained than by any existing continuous process. The plant is cheap and very simple; there is nothing about it to get out of order, and there are no filters to become clogged.

To remove calcium carbonate (carbonate of lime) from water costs very little, because lime alone is necessary, and it is very cheap. To remove calcium sulphate (sulphate of lime) alkali must be used, which greatly increases the cost. Both lime and alkali are necessary for the removal of magnesium salts, and, what is more, the alkali has to be used in greater relative proportion. Waters containing much magnesium salts are therefore the more costly to treat. But the costliness of softening is in many cases a measure of the necessity for softening; and it is often more economical to soften a bad water, which can be had for the pumping, than to pay for water which is itself only less hard than the existing supply. The softening of the water may be effected by caustic soda alone, but this is needlessly expensive.

Painting Ironwork

At a meeting of the Association of Engineers of Virginia, Mr. S. Wallis dealt with the painting of ironwork. He recommended that the first coat should be red lead ground in raw linseed oil, used within two or three weeks after mixing, and kept thoroughly mixed when in use. This coat would dry in from twenty-four to thirty hours. For a black finish the next two coats should be made up from a paste composed of 65 per cent. of pigment and 35 per cent. of raw oil. The pigment should consist of 65 per cent. of sulphate of lime and 30 per cent. of lampblack, to which should be added 5 per cent. of red lead as a drier, the whole thinned to a proper consistency with pure boiled oil. For a red or brown finish the paste should contain 75 per cent. of pigment and 25 per cent. of pure raw oil. The pigment in this case would consist of 55 per cent. of sulphate of lime, 40 per cent. of oxide of iron and 5 per cent. lime carbonate as a drier. Lead paints were not recommended for finishing coats on account of chalking, nor zinc paints on account of cracking.

The superintendent of a large New England factory places all his fire pails on hooks which work on steel springs. The hook is strong enough to lift the pail when nearly empty, but a full pail forcibly depresses it. A metal point is so placed that when the spring in closing presses the point it closes a battery circuit and rings a bell in the office of the superintendent. He is thus constantly advised if the water in the buckets has evaporated, or if someone has borrowed the pails.



That Doesn't Prove It.

Because what soda will lie on a dime will sweeten your stomach

Is no reason to believe that what will lie on two nickels will have the same effect.

The fact that someone else has succeeded in the Sulphite business does not say that all will.

Indeed it's like every thing else: one may have every natural advantage and fail.

But with all natural advantages you cannot succeed without a good Digester.

We don't claim to have the only Digester or that other Digesters will not make pulp;

But we do claim that no one can afford to buy a Digester or build a mill without consulting us.

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HARRISON LORING, Engineer and Architect, being both theoretical and practical to a great extent, and having had great experience in designing, building and arranging buildings and machinery in the best manner for successful and economical working, will assist in general arrangement of mills, free of charge, and will construct the best form of Digesters, Acid Plants or other specialties at prices no more than an ordinary profit. A study of the methods of lining digesters enables him to give all desired information, which will be given only in confidence to his customers.

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MANUFACTURERS OF

Mineral Asphalt Roofing . .

—FROM—

. . *Pure Trinidad Asphalt.*

FIREPROOF. PLIABLE AND DURABLE.

—ALSO—

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(WYCKOFF PATENT),

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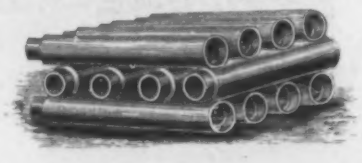

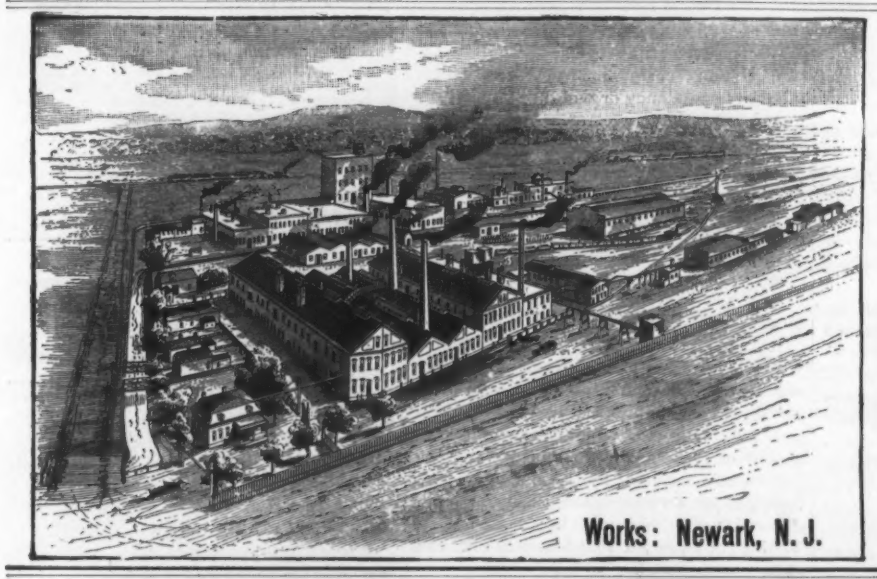
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GIVE A UNIFORM TEMPERATURE THROUGHOUT THE CYLINDERS.
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THIS SYSTEM CAN BE APPLIED TO ANY PAPER MACHINE. *ESTIMATES FURNISHED FOR APPLYING SAME.*

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The **Russell Patent** covers every description of Acid Proof Cement Lining and can be applied to any form of Sulphite Digester in use. This Lining for Sulphite Digesters is now in constant operation in many of the largest mills in the country, **more than thirty Digesters being lined with the RUSSELL CEMENT LINING,** and in every case it has given entire satisfaction and proved itself to be a **Perfect Lining.**

IT IS THOROUGHLY ACID PROOF.
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IN THE "ONE METAL" DIGESTER IT PREVENTS CORROSION AND THE DANGEROUS EXPANSION OF THE BRONZE.

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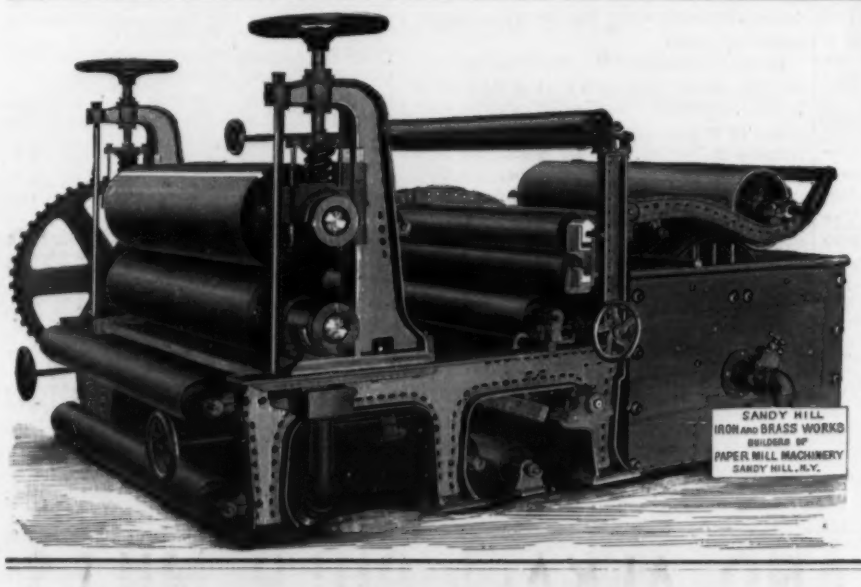

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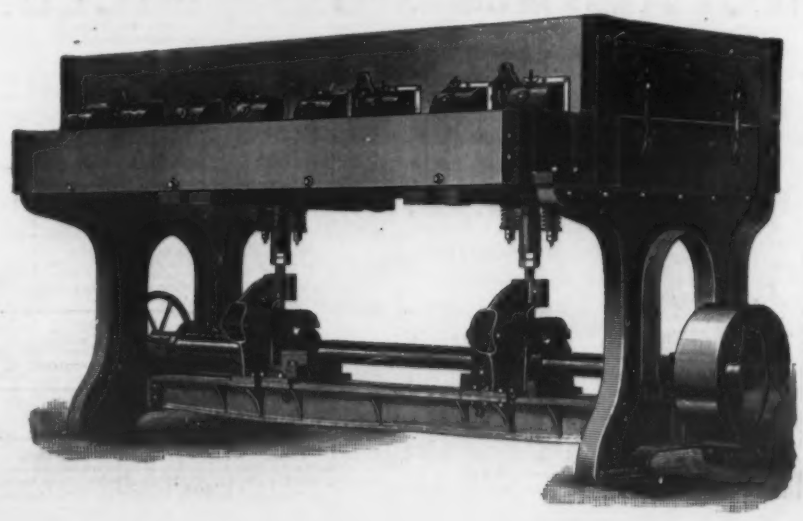

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Six (6) hours' time only required to put in position ready for work.
Excellent work accomplished with eight (8) plates and 11-1000 screen plate.
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IT HAS NO EQUAL AS TO SCREENING QUALITIES, CAPACITY AND SAVING OF STOCK.

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Foreign Trade from the World's Fair.

It would be interesting to know what the World's Fair exhibits in Machinery Hall have brought back to their owners in orders in the past year. Paragraphs have appeared in trade journals from time to time, telling of foreign orders received by this and that manufacturer of machinery, and the showing made in these stray bits of news has been no inconsiderable one. "Our foreign business has been almost as great as that at home," remarked a manufacturer of special machinery recently, referring to the trade of the past two or three months. Of course the statement was more of a commentary on the falling off of business with home concerns than an indication of rushing foreign trade, but it showed that the dullness would have been far less tolerable but for the occasional encouragement contained in European and South American mails.

It is safe to say that the returns from the Fair, coming through the representatives of foreign governments or foreign manufacturers who visited Chicago have been more immediate and more directly traceable than those from home buyers. It is a pity that the depression had to draw out its slow length on the heels of the greatest of world's expositions, and that American manufacturers who spent money liberally, to be creditably represented at Chicago, have had no opportunity to judge of the value of such expositions as getters of trade. On their face the advertising possibilities seem limitless. The manufacturer who has been interesting the trade in new tools by means of photographs, sectional drawings, trade journal and catalogue descriptions, could only look upon the opportunity to set up his whole line of machines in a place where thousands of possible buyers would see them as the chance of a lifetime—and the outlay for exhibits at Chicago was on a scale showing faith in large returns. Yet the belief is prevalent that the money so spent is not likely to come back in direct returns.

The trouble in home business is not only that possible buyers have not been in position to purchase since the Fair, but that the multitude of other advertising methods employed for years by exhibiting firms makes it impossible to say, except in special cases, what part of the orders received in the past year or more have been due to the six months' display at Jackson Park.

A question of no little moment, in connection with the foreign trade which the machinery manufacturers of the United States have enjoyed in the past year, is how the wedge may be driven deeper and these new markets thoroughly opened. The orders directly traceable to Jackson Park, and those that will come because the first purchases have been satisfactory, and because the American machines in operation in foreign countries have attracted the attention of other buyers, will not establish a foreign trade that can be counted upon. So sharply are neutral markets being competed for by English, German and French manufacturers, that if the United States is to get its share, it must do what has long been done by British and Continental manufacturers. The secret of their success in selling goods away from home has been their study of the countries to be supplied, and establishing and maintaining close relations with them.

E. L. Baker, United States Consul at Buenos Ayres, reports that there have been English houses doing business on the River Platte for upward of a century. The result is the almost complete control of the Argentine trade by the United Kingdom. At the same time, Consul Baker says, there are not a hundred citizens of the United States in the entire country, and of these not twenty-five are engaged in American commercial business, and only one or two in the importation of American commercial goods. European shipping facilities and European banking facilities have fixed the lines of commercial intercourse for many of these South American countries. Before the United States can hope to get any strong footing in these countries, it must furnish facilities for the speedy transmission of goods, such as do not now exist. Hawthorne Hill, writing on this subject in the *Engineering Magazine* says:

"The position of the United States in many branches of South American trade is better illustrated by the case of a New York firm who received a cable order from Rio Janeiro, and who answered that the goods could not be shipped before the return of a vessel which happened at the moment to be changing cargo at the latter port. The Brazilian repeated his order by cable to London, and it would not be strange if he never attempted again to buy anything in the United States."

In concluding his thoughtful and suggestive article, Mr. Hill makes these observations as to ways and means:

"As for methods in the export trade, it may safely be taken for granted that what is being done successfully by one country can be done by another, just as Americans have demonstrated their ability to manufacture goods in any class that has been produced abroad. American disregard for precedent in dealing with political and industrial institutions, here on new soil and under novel conditions, may have been well enough, but in cultivating trade with other countries, perhaps much older than our own, it would be foolish to ignore the example of those who have already succeeded in this field, whether Americans or Europeans. To find what foreigners want, and for what they want it, and the difference between their tastes and those of our own country, is a work requiring study and application, involving travel and special education of multitudes of our young men. The manufacture of superior goods is not enough. Even low-priced goods will not give the key to the situation. The question when our competitors are found selling goods in any market accessible to us, is, "How is it done?" If our manufacturers are not ingenious enough to answer the question for themselves they may as well remain content with their home trade; no one is going to force the knowledge upon them."

That Americans have not done in neutral markets what their European competitors have is due to the fact that they have been kept busy supplying the best market in the world. In entering the race in distant countries they will not long need to take suggestions from Europe. Trust Yankee ingenuity to discover the "how" when once it has been determined to launch further out.—*Iron Trade Review.*

Testing Lubricating Oils.

The following summary and easily made tests of mineral oils used for lubrication have been recommended by Crosnier. To determine the flashing point it is sufficient to heat the oil in a porcelain or platinum vessel with thermometer attached, and to try it from time to time with a flame; a good oil should only give out inflammable vapor at a temperature exceeding 100° C., and the liquid itself should not ignite below 200° C. To determine the degree of consistency or fluidity, 10 cubic meters (0.61 cubic inches) of oil should be placed in a small funnel with long and narrow spout, and then heated to a temperature of 100° C.; the number of drops flowing in a given space of time permits of comparison between two oils, or of an oil with a standard, the fewer drops passing the better will be the oil in this respect. To detect the presence of free acids, which are objectionable in lubrication, the above quantity of oil may be intimately mixed with half the quantity of strong alcohol previously heated to 50° C.; after the two substances have been left in contact for several minutes, the alcohol must be decanted and if a blue test paper plunged therein be not tinged it may be concluded that there is no free acid present.

An easier method for detecting acid is to place the same quantity of oil in a glass (having a foot or stem) with a penny or other copper piece thoroughly scoured; if after remaining in a hot place for several days the copper is not attacked nor the oil discolored it may be regarded as free from acid. To ascertain the density of oils, which generally varies from 0.825 to 0.026, if they are sufficiently fluid at the ordinary temperature, an aërometer will serve; but when they are very viscous the action of the instrument is not sufficiently free, and the following method must be adopted, after roughly determining the density with the aërometer: Into a mixture of water and alcohol, having a density equal to that roughly ascertained, must be allowed to fall a few drops of the oil, which will sink to the bottom if heavier, or rise to the surface if lighter; but by modifying these liquids with suitable additions of water or alcohol a mixture may be found which will hold the oil in suspension, when it is sufficient to take by the aërometer the density of the alcoholized liquid in order to ascertain the density of the oil to be tested.

Wire for Paper Machines.

A new form of wire cloth for paper making machines consists of helicoidal wires interlaced and combined with straight wires inserted through the interwoven spirals, these straight wires having for their object to stiffen the web or fabric in the direction of its width, without interfering with the pliability of the fabric in the direction of its length. The introduction of these straight wires between the spirals may be effected in any convenient way during the manufacture of the fabric. For paper making purposes the web thus obtained is rolled and compressed.

The combination of the straight wires with the spirals prevents the formation of pockets or folds, and produces rigidity widthwise without impairing the property of pliability lengthwise.

Oil as Fuel.

The difficulty which is being experienced at present by manufacturing establishments on account of the shortage of coal growing out of the miners' strike gives especial interest to the report on the working of the oil fuel used at the World's Columbian Exhibition, which has just been made by C. F. Foster; while it is gratifying to know that the trial of oil fuel was entirely satisfactory.

During the period the Exhibition remained open the main boiler plant consumed 10,614,410 gallons, or 74,300,805 pounds of oil for generating steam, developing the aggregate energy of 32,315,964 horse power hours, at a cost of 6.3 mills per horse power hour. The contract price for the oil delivered in the Exhibition tanks was 72½ cents per barrel of 42 standard gallons. The boiler house force and equipment comprised 210 burners, atomizing oil beneath fifty-two boilers, with a standard rating of about 21,000 horse power and attended by a staff of forty-two men, divided into three eight hour shifts.

The saving in cost of both fuel and labor for the oil fuel, as compared with coal of fair quality at market price for large quantities, is apparent.

An equivalent consumption of from 500 to 600 tons of coal per day would have been necessary, so that for the duration of the exhibition 70,000 tons of coal would have been needed. Apropos of this, Mr. Foster remarks that "it would be difficult to imagine how this vast amount of coal would in the limited space available have been handled expeditiously and without endangering life and property."

The saving to the Exhibition by the use of oil fuel was about 27 per cent., as compared with the estimated cost of coal, including the labor of handling. The oil plant worked from start to finish without a break, and the smokelessness and absence of odor from the chimneys of the boiler house were made a subject of general comment.

It appears from the statement of Dr. C. O. Weber that in the use of liquid fuel Russia is in advance of all other countries. During the coal strike many Manchester (England) firms had recourse to petroleum as a fuel; but the results, in every instance, seemed to have been discouraging. In Russia it was only the heavy petroleum residues, astatki, which were used for boilers, railway engines and similar purposes. Astatki on combustion produced 11,000 cal., as against about 8,000 cal. obtained from first-class steam coal. It appeared, therefore, that in this respect 62 pounds of astatki were equal to 100 pounds of coal.

By working side by side two boilers of the same type, firing the one with coal, the other with astatki, it was found that 1 pound of coal evaporated 8 pounds of water, and 1 pound of astatki 13 pounds of water. The relation between the volume of air passing into the furnace and the quantity of water evaporated was also important, and it was found that for 1,000 cubic feet of air consumed coal evaporates 1.5 and astatki 2 pounds of water. Consequently, besides a smaller weight of fuel, also about 20 per per cent. less heating surface was required for astatki fires.

This was apart from the cost of the fuel, an item of considerable importance for marine boilers, as it would allow to reduce their volume very considerably without lessening their steam producing capacity. The works in and around Moscow used in 1890 about 100,000 tons of astatki, at a saving of about 30 per cent. as compared with coal. The price of the residue at Moscow is $25 per ton.—*Manufacturers' Gazette.*

Electricity from Rubbish.

The satisfactory disposal of the rubbish and refuse of our large towns has for years occupied the close attention of engineers and sanitarians alike, and various modes of dealing with the problem have been advocated and carried into practice; while the statement furnished by reliable statistics, that London alone furnishes no less than 1,500,000 tons of refuse per annum, affords our readers some adequate idea of the magnitude and importance of the difficulty to be grappled with by the local and municipal bodies.

The production of a furnace suitable for the most economical combustion of all kinds of refuse has necessarily required much time and skill; and it was only after twenty-five years of close application to the problem that the late Fountain de Livet, a French engineer, succeeded in securing a powerful natural draft in furnaces without artificial means, and consuming rubbish without smoke or noxious fumes of any kind.

Without entering into the minutiæ of Mr. Livet's invention it may suffice to state that the latest and most approved generator of steam from refuse consists of three cylinders, two of which are fitted with internal fire grates and flues; while the third one, placed centrally above, is kept about half full of water, and acts as a steam chest. The specialty of the furnace is the adaptation of such form of flue as will utilize the increasing tendency or weight of the gases generated as they travel toward the chimney, thus inducing a high velocity of air through the furnace bars, and rapid combustion and intense heat in the furnaces themselves.

A destructor erected on the Livet system is in operation at Halifax in Yorkshire and produces from the combustion of refuse electric current sufficient for some 2,000 candle power arc lamps and a search light of 25,000 candle power.

It is of course unnecessary to point out how widely diverse is the composition of town refuse; its constituents—ashes, vegetable refuse, tin cans, old boots, paper, &c., and the million items which find their way sooner or later to the dust heap—are well known to everyone; and obviously any attempt to put a value on the heat producing capacities of rubbish must be a little vague. Taking, however, a rough average of the results obtained, an ordinary sample of town refuse is pronounced by experts to be equivalent to about one-third or one-fifth its weight in coal, namely, from 3 to 5 pounds of refuse will generate as much heat as 1 pound of coal; while the refuse after consumption is found to be a clean, massive, metallic clinker, well fitted for road material; or, after being ground up, for mortar.

It is of course hardly necessary to add one word of caution in regard to the invention now under consideration. It is not to be assumed that because rubbish is burned the electricity necessarily costs nothing; the cost of plant, distribution of power and many other expenses must not be lost sight of, to say nothing of the labor of collecting the refuse. Allowing, however, for all this, it is quite clear that an invention which rids the community of a great nuisance, and does so without creating a further one in the shape of noxious fumes and smoke, and at the same time turns to good account the heat generated, must confer benefits upon the community at large, and that the keen interest aroused in the new adaptation is amply warranted by the sound economic principles on which it is based.—*Chambers' Journal.*

Coal Waste as Fuel.

A commission appointed by the Pennsylvania Legislature to investigate the waste of coal in dust or culm recently reported that from 19 to 74 per cent. of the entire output from the various colleries went to the dirt piles or culm heaps. Altogether the commissioners estimated that since the beginning of coal mining in the United States the small coal and coal dust and dirt which have been sent to the culm banks amounted to 315,700,000 tons or 35 per cent. of the total product. The automatic stoker invented by Eckley B. Coxe to burn this refuse consists essentially of a traveling grate, moving from right to left, at the rate of 3½ to 5 feet an hour. The coal, which is brought to the hopper by a drag, spout or other convenient method, feeds down by gravity over the firebrick on the traveling grate.

In the beginning of the operation the coal on the right hand side of the furnace is ignited, the other part being covered with ashes or partly consumed coal. After the furnace is heated, the fire brick, which is called the ignition brick, becomes hot, and the coal passing down under the regulation grate becomes gradually heated, and by the time it reaches the ignition brick it is incandescent. It is claimed for the new contrivance that no amount of dirt in the coal dust will make any difference in its effect, and that it is adapted equally well for burning not only the regular sizes of coal, but also bituminous coal, if circumstances make it necessary. It is also claimed that it will work a great difference in steam navigation, as it needs fewer boilers and does away with the army of stokers now necessary.—*Carbondale Leader.*

According to Professor Bauschinger, the adherence between iron and Portland cement is as much as 625 pounds per square inch. This figure, when taken into conjunction with the fact that cement and iron have about the same rate of expansion per degree of temperature, has had much to do with the success of concrete arches in which the concrete is reinforced at points where it is subject to tension by iron rods imbedded in it.

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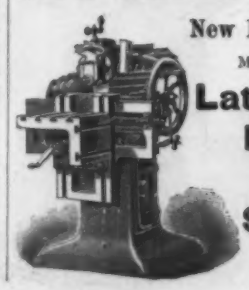

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Dandy Roll, Fourdrinier & Other Wire Mfrs.

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CLARK, CHARLES S., News Paper in Rolls for Perfecting Presses. Book, Plate and Chromo Papers. Potter Building, 38 Park row, N. Y.

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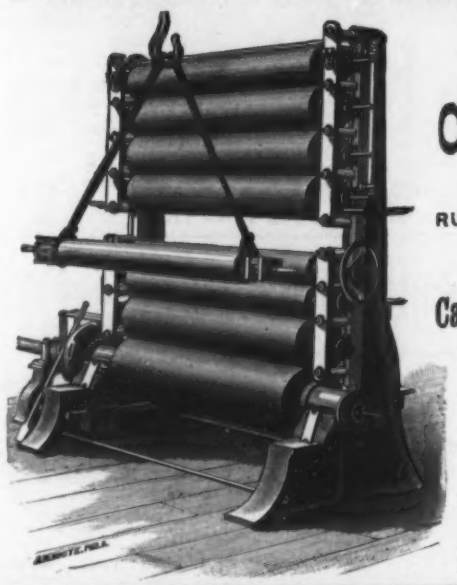

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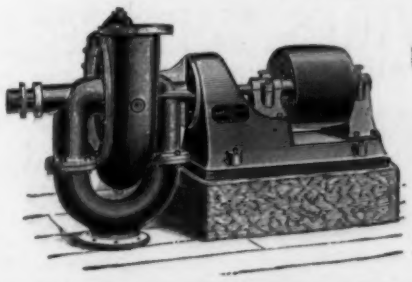

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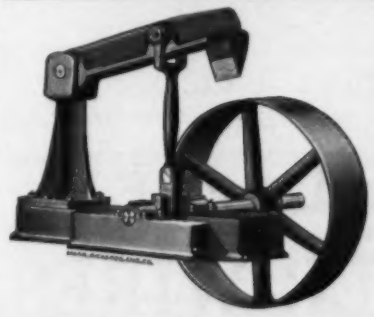

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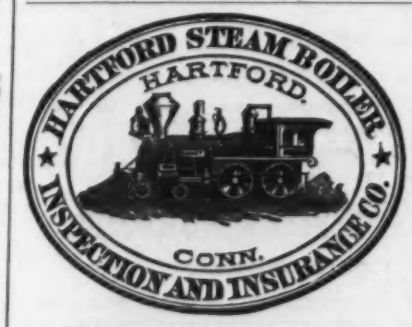

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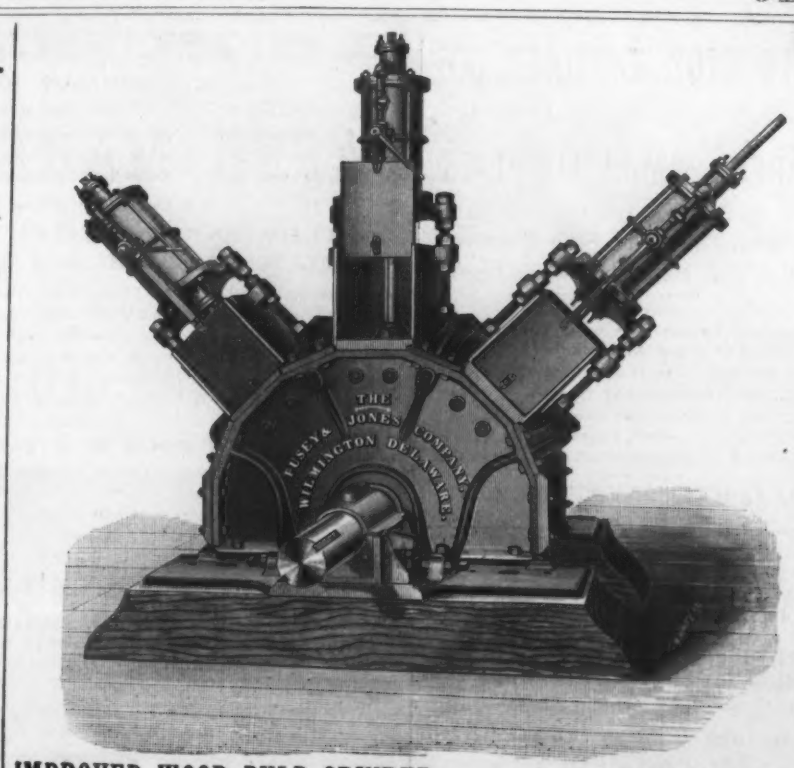

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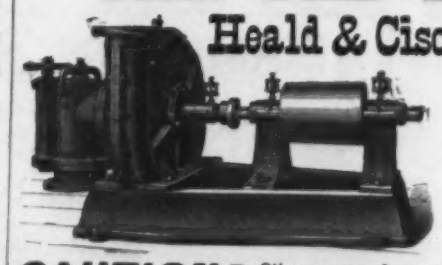

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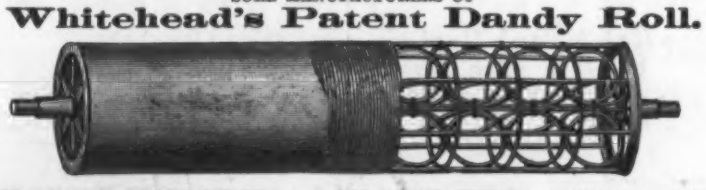

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